ESSAYS

ON SOME OF THE MOST IMPORTANT ARTICLES

OF THE

MATERIA MEDICA,

COMPRISING

A FULL ACCOUNT OF ALL THE NEW PROXIMATE PRINCIPLES, AND THE POPULAR MEDICINES LATELY INTRODUCED IN PRACTICE, DETAILING THE FORMULAS FOR THEIR PREPARATION, THEIR HABITUDES AND PECULIARITIES, DOSES AND MODES OF ADMINISTRATION, WITH

REMARKS

ON THE

Most Eligible Form of their Exhibition:

TO WHICH IS ADDED,

A CATALOGUE OF MEDICINES,

Surgical Instruments, &c. &c.,

ADAPTED FOR

A PHYSICIAN AT THE OUTSET OF HIS PRACTICE,

WITH THE

Doses and Effects attached to each Medicine, &c. &c.

By Geo. W. Carpenter.

PHILADELPHIA,
Geo. W. Carpenter's Chemical Warehouse, 301 Market St.

1831.

EASTERN DISTRICT OF PENNSYLVANIA, TO WIT:

Be it remembered, That on the twelfth day of July, Anno Domini, one thousand eight hundred and thirty-one, GEORGE W. CARPENTER, of the said District, hath deposited in this office the Title of a Book, the title of which is in the words following, to wit:

Essays on some of the most important articles in the Materia Medica, comprising a full account of all the new Proximate Principles, and the Popular Medicines lately introduced in Practice, detailing the Formulas for their preparation, their habitudes and peculiarities, doses and modes of Administration, with Remarks on the most eligible Form of their Exhibition; to which is added, a Catalogue of Medicines, Surgical Instruments, &c. &c. adapted for a Physician at the outset of his practice, with the Doses and Effects attached to each Medicine, &c.&c. By Geo W. Carpenter.

The right wereof he claims as Author, in conformity with an Act of Congress, entitled "An Act to amend the several Acts respecting Copy-Rights."

D. CALDWELL,
Clerk of the District.

TO THE

MEDICAL CLASS

OF THE

UNIVERSITY OF PENNSYLVANIA,

THIS WORK IS HUMBLY SUBMITTED,

BY THE AUTHOR.

PREFACE.

In submitting the following pages to the Medical community, it will be necessary for me first to apologize for their imperfections, and I feel satisfied they will indulge me under the circumstances of the case. They were penned during the short intervals of suspense amidst the bustle and toil of an active business, and my object was more for the purpose of keeping up strict habits of industry and close application, than for any benefit which I could anticipate to result from their publication. The former I am certain to have attained, and should the latter result, I shall be doubly rewarded. I have at various times contributed essays on the different articles of the materia medica to our medical journals, particularly to the Philadelphia Journal of Medical and Physical Sciences, and to the recent highly valuable periodical the American Journal of Medical Sciences. My Medical friends have frequently called upon me for copies of these essays, until I had distributed several thousand of each, when I was earnestly solicited for some time (having exhausted all the loose copies I had printed,) to publish them together, and in compliance with these requests, I have introduced this work to public attention. I rely upon my Medical friends for its support, and

I purpose, if sufficiently encouraged, to publish a more enlarged view of the articles of the materia medica generally, under the title of Pharmacologia. In the present work I have added considerably to the essays above alluded to, by introducing a full description of the new and popular medicines which I have lately brought into notice, and which I now exclusively manufacture. I have also embraced in the present work, a concise account of some of the new and valuable medicines introduced to public attention by the excellent treatise of Majendie, and have quoted the formulas which he has laid down for their preparation, because I consider them a standard, which all the apothecaries and physicans should invariably adhere to, in order that we may have uniform preparations. I repeat again that these formulas are from Magendie, for not having adverted to it in the places where they have been given, I wish it here particularly understood, for there will be, no doubt, some of my competitors seeking every little avenue of this publication to hunt out and magnify any little weak points, (more or less of which may be called out of the most valuable productions,) while the brilliant light of truth and information which they contain, generally drives them in despair before they have fully completed their worthy intentions; hence it is we find men of the most depraved talents undervaluing masterly compositions, because they do not fully understand them. And how often in our daily

walks in life, and in our intercourse with the world, do we find these circumstances manifested. How many able speeches and orations do we see tattered and torn, by persons unable to speak, or with capacity to understand. But what does it effect? And what is its influence? They are generally ere long defeated by their own language, and the orator stands the same, and the oration has lost no more by their condemnation than it would have gained by their applause.

I do not by any means wish to condemn criticism, it is the very life and essence of writing, and when it is done impartially, and without prejudice, should always be invited by the author.

There is no circumstance which evinces more strongly the progress of Medical Sciences, than the general and increasing spirit of emulation, and the ardour with which many of its votaries apply in developing and substantiating new facts, as the fruitful result of their researches and discoveries. Chemisty and Pharmacy have contributed more largely to the grand fund of solid and substantial information, than any other branches of the Medical Sciences. It is to this department we are indebted for the valuable acquisition of Quinine, Morphine, Piperine, and other proximate principles; and, a number of highly valuable improved and concentrated preparations, as the Compound Fluid Extract of Sarsaparilla, &c. &c. all of which have become perfectly established in Medical prac-

tice, and their particular effects can now be relied upon with as much certainty as Calomel and Opium. While speaking of Sarsaparilla, I cannot refrain from expressing in this place, the valuable properties of the Fluid Extract, which possesses so many advantages over the syrup, decoction, and solid extract, which is proved in the subsequent pages of this work. Physicians can now rely upon an uniform preparation, and can conveniently prescribe it; and the patient will now be relieved from the trouble and difficulties of preparing the decoction, which was seldom sufficiently boiled, and otherwise improperly made by those unacquainted with phamaceutical preparations. I have seen very silly objections made to this preparation by one of my competitors in trade, who is ever ready to *speculate* on the analysis of articles which he is unacquainted with, and thus frequently makes excessive blunders; this is to be pitied, since he might at once strike upon a much more successful effort in quoting the analysis and composition of the *improved* water colours, which he must necessarily be more acquainted with, and which, in fact, might be an interesting disclosure. We must, however, expect to meet with the collision of opposite opinion, and at the present epoch, we cannot expect that we should all agree upon any one subject, though it were as manifest as the unobscured sun at noonday. We must, therefore, expect to meet with opposition in the most useful dis-

coveries. Hence we frequently find a person opposing articles, their usefulness and superiority fully established by well attested facts, and by the experience of some of the most distinguished men; and all this without advancing arguments, or producing facts. I say we object to an individual less able to judge, than perhaps any one of those he is opposing, to advance his opinion against a host of men eminent in the profession, and to offer his opinions as a pattern to be followed, when in truth, they are an obstacle to be shunned; but such is the blindness of human nature, that men are too apt to set themselves up as guides, when they should be satisfied to serve as beacons. There is no doubt they may now and then meet with a follower or disciple, who will catch at their opinions and support them as an expedient, but they generally in a short time die away for want of support, while articles they have expended themselves upon, appear to have taken fresh roots from the nourishment, and the branches to have extended themselves in all directions far and wide. Thus we find the Saratoga powders described in the following pages to have become every year more and more popular, and their usefulness to be more and more appreciated, and the demand for them co-extensive with their increased reputation. They have been introduced in every section of the United States, and have given in all cases the most decided and unequivocal satisfaction, and produced the most salutary

and beneficial effects, and have elicited from the faculty and highly distinguished individuals in various places, voluntary acknowledgments of satisfaction, and expressions of high commendation on their character and properties, while the miserable objections and defective analysis of an apothecary have long since slumbered in forgetfulness. Thus it was with Quinine, the same objections were made to it when first introduced, and much clamour and opposition raised, one said it was too acrid, another too uncertain, and a third too costly, that it would never be used. But these objections one by one gradually subsided, while Quinine raised its aspiring head, and its extensive usefulness soon became manifest to the total obscuration and entire oblivion of the foolish objections which had been started, and we may venture to say there is not a single practitioner of medicine who will not admit its value and superiority to the bark.

Thus it is with the Fluid Extract of Sarsaparilla, the clamours which was raised against it by a competitor in trade, as clearly growing out of envy and prejudice, as any fact which could possibly be proven by circumstantial evidence, has already been annihilated, while this preparation is rapidly increasing in reputation, and is now prescribed by the most distinguished physicians in the United States, and with the most decided satisfaction, it is certainly an article which should receive their support and ap-

probation, as it would have a tendency of putting down, in a great measure, the various nostrums which are sold under different names, and which are in fact nothing but Compound Syrup of Sarsaparilla, which is most frequently improperly made, as the venders and manufactures of them in most cases, never been brought up in the profession, are ignorant of pharmacy, and their preparations will, therefore, be very defective. There is nothing concealed in the composition of the Compound Fluid Extract of Sarsaparilla, being made from the articles composing the Lisbon Diet; its value and superiority over other preparations is owing entirely to the peculiar manner in which it is made, by which all the medical virtues are extracted from the roots by the most efficient process, based on chemical principles, obtained from the result of numerous experiments made exclusively for the purpose of ascertaining the same. There will be found in this work a description of a number of new medicines prepared and introduced by me, which have all been sufficiently tested and proved by ample experience by some of our most eminent physicians, to possess fully the virtues and properties which have been assigned to them. The Compound Extract Buchu, Oil of Cantharidin, Compound Tonic Extract, Citrated Kali, &c. &c. &c. will all be found on trial to be valuable medicines, and I feel satisfied will prove useful to the

practitioner, and meet with the decided approbation of the faculty, as they have been wherever yet introduced.

☞ I would beg leave particularly to inform the faculty that there has been various imitations of my Compound Extract of Sarsaparilla, Saratoga powders and several other preparations, and that sales of them have been effected on the reputation of mine. They are put up in the same form, the name borrowed, also part of the description and directions so as to imitate externally as closely as possible, my preparations. The faculty, therefore, in making out their orders, who wish those prepared by me should express it decidedly in their directions, or they might perhaps get another article. I have heard frequent complaints from physicians in the country who had ordered my preparations and received instead of them spurious and inferior imitations, which was the cause of so much displeasure, that they immediately sent their orders direct to me. I think the original inventor should receive the benefit of his improvements, and that spurious imitations of every kind should not receive encouragement but the disapprobation and censure of the community.

OBSERVATIONS AND EXPERIMENTS

ON OPIUM.

Its varieties and appearance in commerce, &c. &c.

This important article, from its extensive usefulness, in modifying and alleviating the most afflicting and painful diseases incident to human nature, merits perhaps the most conspicuous place in the *materia medica;* yet from being injudiciously administered, and more particularly from its pharmaceutical preparations, being improperly made, it frequently produces injurious and distressing consequences. With the hope of remedying some of these inconveniences, I have made a series of experiments, the results of which are contained in the following observations. Before, however, entering upon the pharmaceutical preparations, it may not perhaps be improper to offer a very concise view of the natural history and physical characters of this article, as it occurs at the present day in our commerce. Opium is the product of the Papaver somniferum, and is the inspissated juice of the capsules of that plant. It has been improperly termed a gum by many authors, and the error prevails to the present day. It is a native of

the southern parts of Asia. It may, however, be raised in our gardens, and is now cultivated in England on an imposing scale, which has been increasing for several years. It possesses the same properties as the Turkey or East India opium, and is more pure, containing a larger portion of soluble matter. The Turkey opium has hitherto possessed the best reputation, and has been considered superior to any other. Dr. THOMSON* informs us, that he obtained from Turkey opium nearly three times more morphia than was yielded by the same quantity of East India. I have treated equal quantities of Turkey and English opium by the same process, and obtained twenty per cent. more morphia from the latter than the former; this would sanction the belief of the superiority of the English; which superiority, I think, is to be attributed to the careful manner in which it is prepared. The following are the prominent characters of the several varieties of opium, and by which they may be easily distinguished.

Turkey opium is of a reddish-brown colour, possessing a strong narcotic odour, of a solid and compact consistence, when dry has a shining and uniform fracture of a dark-brown colour producing a reddish-brown powder; the best kind is generally in flat pieces.

East India opium is of thin consistence, sometimes almost like that of honey; when dry it is more friable, its colour nearly black, and possesses less bitter and a more nauseous taste than the *Turkey;* it has a

*London Dispensatory.

strong empyreumatic odour, and not the narcotic heavy one which is so sensible in the Turkey; it is considerably cheaper and much inferior in strength to the latter, and according to Dr. Thomson contains but one-third the quantity of morphia and a larger portion of narcotine, which renders it a far less desirable article. Dr. Coxe, in his valuable American Dispensatory, remarks, that one-eighth the cakes is allowed for the enormous quantity of leaves with which they are enveloped. This opium is little used in this country, and is seldom, if ever to be found in the shops of our druggists.

English opium is generally in smaller cakes, frequently thin and flat, of a more permanent consistence, of a clear smooth fracture, and is destitute of leaves, stalks, and other impurities which generally accompany opium. It has the general character of being superior in quality to the Turkey, which *chemical analysis** has determined. The quality of opium

* It is to chemistry that we are indebted for many important facts in relation to opium, and for the knowledge of morphia and narcotine, the two active principles of opium—two principles of a directly opposite nature existing in the same substance, and exercising individually their particular effects on the constitution. Many are opposed to chemical analysis as a means of discovering the virtues of medicines, and among others Dr. Young,† who states as an argument that Geoffroy discovered by chemical analysis that the soporific quality of opium depended upon its sulphur. We might agree with Dr. Young, if the science of chemistry had not advanced since the period alluded to, and did experiments upon opium now lead to similar conclusions. We might as well reject as useless the

† Young on Opium.

differs very materially, even that from the same country, climate, soil, &c. which arises no doubt in many instances from the manner in which it is prepared and cultivated. It is frequently found in our market mixed with leaves, stalks, seeds, &c. and from the great proportion of these admixtures in some opium, it would lead to a conjecture, that the leaves were worked in when the opium was in a very soft and recent state, for the purpose of increasing the weight and consistence. I have even seen opium whose external characters possessed all the features of superior quality, and when broken, exposed a large proportion of the leaves and capsules of the poppy, which, although it does not alter the particular effects, must diminish the activity of the opium in direct proportion to the quantity and weight of these extraneous and insoluble matters, and I have ascertained by careful experiments that the quantity of soluble or extractive matter by the same menstrua and process, yielded by different parcels of opium, varies from four and a half and five to six drachms in the ounce.

analysis of cinchona bark, because a chemist has asserted that the comparative quantity of the active principles, (quinine and cinchonine,) yielded by the Carthagena bark, was in proportion to the quantity yielded by the Calisaya as 1 to 70. If errors so palpable would have retarded the inquiries and labours, or diminished the zeal of the scrutinizing chemist, the science, instead of holding the elevated rank it now possesses, would long since have dwindled into obscurity. Errors and absurdities will naturally creep into every department of science.

The consumption of opium is almost incredible. In the year 1800, 46,308 lbs. were consumed in Europe. In the year 1809, the revenue which the Bengal governmet derived from the sale of opium, was 594,978*l*, and the exports of opium from Calcutta to China alone, in 1811–12, amounted to 4,542,968 sicca rupees—567,871*l*.* The supply for Calcutta for 1827, is rated at 13,700 chests. The supply for 1826 was 10,300 chests, making an increase of 3,400 chests in the last year.

Although opium is prohibited by the Chinese government, yet about 2000 chests are annually imported into Canton, the average sale price being 1200 dollars per chest, making the amount annually expended by Canton for this drug, the enormous sum of 24,000,000 dollars. About 40,000 pounds are annually imported into London.

In the provinces of Bahar and Banares, among the most productive of the East Indies, the common product of opium is twenty-four pounds to an acre, besides which the cultivator reaps about forty pounds of seed. The preparation of the raw opium is under the immediate superintendence of the company's agent, who adopts the following method to prepare it. It consists in evaporating, by exposure to the sun, the watery particles, which are replaced by oil of poppy seeds, to prevent the drying of the resin. The opium is then formed into cakes, and covered with the petals of the poppy, and when sufficiently dried, it is packed in chests with the frag-

*Hamilton's East India Gazetteer.

ments of the capsules, from which poppy seeds have been threshed out. It is said opium is sometimes vitiated with an extract from the leaves and stalks of the poppy and with the gum of the mimosa.

The cultivation of opium in England, if extensive, will no doubt influence the price of this article in our market.*

It has lately been more successfully cultivated by a Mr. Young, than any other person who has yet attempted its culture in Great Britain,† and from which more flattering expectations are entertained of its success. Dr. Coxe, however, in his standard work, the American Dispensatory, observes, it is

* Messrs. Cowley and Stains, of Winslow, in the season of 1822, raised 143 lbs. of excellent opium from eleven acres and five poles of land, for which they received a premium from the society instituted at London, for the encouragement of arts, manufactures and commerce. A medal has been given by the society to J. W. Jeston, Esq. Surgeon, for an improvement in collecting the juice of the poppy, which consists in collecting it immediately after it exudes from the capsules, instead of allowing it to be inspissated on the capsule. The capsule is scarified with a sharp instrument, gauged to a proper depth, when the juice is scraped off with a kind of funnel-form scoop, fixed into the mouth of a vial; when one vial is filled, the scoop is removed to another, and the juice is evaporated in shallow pans; some varieties are much more productive than others. (See Transactions of the Society for the encouragement of Arts, Man. and Com. Vol. 41.)

Mr. Ball, in 1796, received a premium from the society for the encouragement of arts, for a specimen of British opium, little inferior to the Oriental. (Transactions of the Society of Arts, vol. xiv. pp. 260, 270.)

†Edinburgh Philosophical Journal, No. II. page 262.

apprehended, the climate of Great Britain is an insuperable obstacle to its becoming a profitable branch of agriculture. It has been obtained in the United States, where this objection will not prevail.* I think the southern states, particularly the Carolinas and Georgia, are admirably adapted, from climate and soil, for the cultivation of the poppy, and if properly managed, would no doubt yield a source of considerable profit to the cultivator, if not an immense revenue to the states, and a most important addition to the productions of our country.

The opium raised in England, has been used for several years by physicians and surgeons, who pronounce it superior to the best Turkey and East India opium. One thing is very certain; it is prepared with more care and attention, and is more free from leaves and other impurities; the fracture of English opium when dry, is as smooth and uniform as liquorice; what I have seen has been put up in small flat cakes, and of a good consistence. Opium is frequently put up in a soft state, and packed with a large proportion of leaves to prevent the lumps adhering; these leaves adhering to the sides, are gradually taken into the body of the opium, which, with that previously incorporated with it, is the cause of seeing opium in the condition of impurity as already described.

Extract of Opium.—Among the advantages which the extract of opium possesses over the crude opium of commerce is, that all the fæculencies and impurities

*Philadelphia Medical Museum, Vol. II. page 428.

having been separated, you obtain the soluble and active portion of the opium in a pure state, and as the insoluble and impure parts exercise no effect, and constitute a considerable proportion of bulk and weight, the opium of commerce must differ in proportion to the amount of these impurities, and consequently cannot be depended upon so well as the extract for activity or uniformity of strength. The extract of opium, as it is generally made, is very objectionable, not being more active than crude opium, and consequently is seldom or ever employed by our physicians. From various modes and different menstrua which I have tried, I find the following to make the most eligible preparation, possessing most advantages both in the activity and persistency of the extract, as well as having the decided superiority over crude opium, by affording all its desirable effects, without any of its inconveniences or disadvantages.

Denarcotised acidulous Extract of Opium.—Digest ʒi. coarsely powdered opium ℔i. sulphuric æther of the specific gravity .735 for ten days,* occasionally submitting to a moderate heat in a water bath, distil off the æther and add fresh portions until it ceases to take up narcotine or act at all upon the opium, which may be readily known by dropping a little on a clean pane of glass which will leave no trace when the opium is completely exhausted, the second or third distillation will prove sufficient, most of the

* Where it is necessary to prepare it in haste, less time may be employed by submitting it more frequently to the temperature of ebullition.

æther may be saved if prepared with care and in a proper apparatus. Professor HARE* recommends the digestion of the opium in æther, to be performed in the Papin's digester, submit the opium thus treated, to the action of spt. vin. rect. ℥viii. acetic. acid. fort. ℥j.† aqua ℥vii. and digest for seven days, filter and evaporate in a water bath to the consistence of an extract. This in fact will be an impure acetate of morphia, possessing most of the advantages of that valuable medicine. One ounce of the best Turkey opium yielded by this process ʒvi. of extract. Laudanum and other preparations may be made of the usual standard, calculating ʒvi. of the extract equivalent to ℥i. of opium.

Denarcotised acidulous Tincture of Opium.—Digest ℥i. of coarsely powdered opium in one pint of sulph. æther, s. g. .735 for ten days, occasionally submitting it to the influence of a moderate heat, until it ceases to act upon the opium, separate the opium and dry it, then digest in spt. vin. rect. ℥viii. acetic. acid. fort. ℥ii. aqua. ℥vi. for seven days, and filter. This preparation will be found to possess great advantages over laudanum and the black drop of the shops, to which it will be much preferable, inasmuch as it will be destitute of the stimulating principle, (narcotine,) which produces such distressing effects, and frequently forbids the administration of opium, where it might otherwise be extremely useful, the

* See Philadelphia Journal of the Med. and Phys. Sciences, No. IX. New Series, p. 78.

† Acid pyroligneous, pure, (concentrated.)

addition of acetic acid will contribute much to increase the calming or sedative effects, which are most generally desired, and for which opium is particularly given. By its union with the morphia, it forms in solution the active sedative salt of opium, (acetate of morphia,) and differs only from the solution of the acetate of morphia of the shops, in its state of purity, and as the extraneous matter with which it is associated has no effect on the animal system, it may be considered as good an article, and should be preferred for general use, in consequence of being much less expensive. As this preparation will always possess uniform strength, and a like proportion of opium, it certainly deserves a conspicuous place among our pharmaceutical preparations, and justly merits to supersede entirely the common black drop of our shops, which is a very uncertain preparation, differing every where in activity from the indefinite and vague manner it is directed to be made, to say nothing of the worse than useless articles which enter into its composition, such as yeast, nutmeg, and saffron.* The black drop

* It is a singular circumstance, that so imperfect and unscientific a preparation should so long have maintained a place in our materia medica. I believe there is no formula, not even for the most innocent compound, so extremely indefinite, and allowing so great a scope to the judgment of the operator.. In the first place, the vinegar containing the opium, nutmeg, and saffron, is directed to be boiled to a proper consistence. The activity of the preparation will consequently be subject to as much variation as the ideas of persons may differ in relation to what is termed a proper consistence, and

owes its superiority over laudanum to the acetic acid of its composition, and to that *alone*, and it will be admitted by those conversant with the articles in question, that acetic acid exercises a most powerful influence in modifying the effects of opium. This I can account for in no other way than by its uniting with the morphia, thereby rendering it much more soluble, and consequently facilitating its effects on the constitution, which are directly sedative, while

while one person after evaporating perhaps one-eighth of the menstrua, would consider it of proper consistence, another might think it necessary to reduce it one-fourth, a third might conceive that even one-half was the right consistence, and the strength of the preparation would consequently be subject to a like enormous variation. In the second place we are directed to digest for seven weeks, and then place in the open air until it becomes a syrup; we cannot see the propriety of digesting so long a time, if at all, when the menstrua, if not saturated by the previous boiling, has at least, taken up all its soluble matter. Exposing it to the air until it becomes a syrup, is subject to as many objections as boiling to a proper consistence, and is almost as indefinite, as the consistence of a syrup is of no fixed standard, but varies from a thin fluid, to the density of honey. It is lastly directed to be bottled, and to add a little sugar to each bottle, what quantity is meant by a little sugar, and what size the bottles are, to which it is to be added, we are left to conjecture; independent of the useless addition of sugar to what is already a syrup; the strength of the article must be diminished in proportion to the size of the bottles, and quantity of sugar to be added; we think an article so active as the black drop, should be prepared with more care, and particular and specific directions given for the mode of its preparation. An ingenious essay upon this subject is given by Mr. Thomas Evans, in the Journal of the Philadelphia College of Pharmacy.

the effects of opium in its natural state are stimulating.*

It has been recommended, by Mr. Robiquet, to make a watery infusion of the opium, and evaporate the aqueous solution to the consistence of thin honey, which is to be digested in æther, instead of the powdered or shaved opium, (as described in the above, and Dr. Hare's formula given in the Philadelphia Journal of the Medical and Physical Sciences, No. IX. New Series.) I consider this a worse than useless expenditure, for the æther will act fully as well, if not more readily, upon opium in powder than upon an extract containing water, and it is generally admitted, at least by the best authorities, Coxe, Thomson, and Paris, that the narcotic powers of opium are impaired by boiling in water, under exposure to air, hence it is that the officinal preparation, opium purificatum, which formerly was highly recommended, is found to be no better, if not less active, than crude opium, from which circumstance it has become almost obsolete, and, rarely to be found in our shops. Under this article, Dr. Coxe, in his American Dispen-

* Dr. Joseph Hartshorne, in consequence of the uncertainty of the strength of the black drop of the shops, has adopted the following preparation, which has been extensively employed, and found to possess all the advantages of that article :—

Turkey opium,	℥j.
Strong Vinegar,	℥vj.
Alcohol,	℥iv.

Triturate the opium with vinegar, add the alcohol, and digest for ten days.

satory, very justly observes, that in consequence of the changes which opium undergoes by solution and subsequent evaporation, (alluding to the opium purificatum,) well selected pieces are to be preferred to this preparation. I cannot see the object in, or the advantage that can result from, making a watery extract, as the opium deprived of narcotine, will be quite as subject to the action of proof spirits, or any other menstrua, with its fæculencies, as the crude opium. We do not make a watery extract of opium in the preparation of laudanum, and it would be quite as necessary in this case as in the former. Besides, water is not the most eligible menstrua for the solution of the active matter of opium. Morphia is sparingly soluble in water, and the meconiate nearly the same, you, therefore, obtain but a portion of the sedative principle, as a part of the morphia will remain with the fæculencies undissolved, consequently, with an increased labour and expense, a less active preparation is obtained, than if the crude opium were at once submitted to the action of æther, and the residue to proof spirits, as in the above formula, to which the addition of acetic acid is an admirable improvement, rendering the morphia more soluble, and consequently more active, in the same manner, and nearly the same ratio, as sulphuric acid united with quinine, (by increasing its solubility,) renders it much more active and efficient. Dr. Thomson, speaking of morphia, observes, that it being scarcely soluble in water, or in the fluids of the stomach, in its uncombined state, does not display in a striking

manner its properties when exhibited alone, but these are very striking when combined with an acid, particularly the acetic. I would here remark, that the acetate of morphia,* of the shops, is a sub-acetate, and is less active than the acetate or super-acetate, which, being a deliquesent salt, must necessarily be kept in solution; it is, therefore, requisite in making the solution from the sub-acetate, to add acetic acid rather in excess than under neutralization. The following is the formula I have adopted, which will make a handsome solution, and is a preparation that will keep:—

Sub-acetate of morphia, - -	grs. xii.
Alcohol, acidulated with twelve drops of acetic acid (pure *concentrated pyroligneous acid*,) - - -	℥i.
Distilled water, - - - -	℥i.

Dissolve the morphia in the acidulated alcohol, and add by degrees the water, and filter. Dose of the solution, from fifteen to twenty drops.

This preparation has been very successfully used by Dr. Holcombe, of Allentown, and Dr. Canfield, of Arneytown, New Jersey, in cases where other preparations of opium could not be administered, in consequence of producing those unpleasant and dis-

* I found, in one instance, the morphia under the name of acetate of morphia, perfectly uncombined with acid. This is a much less active medicine, and it is therefore highly important to test this salt where you wish to administer it in substance. When in solution it must be united with acid, as morphia is insoluble in water.

tressing sensations which frequently result from their use. This preparation is now extensively employed, and is attended with the most desirable consequences.

Narcotine.—By the following process I obtained narcotine in a perfectly pure state.

Digest ʒi. of coarsely powdered opium in one pint of æther, for ten days, frequently submitting it to ebullition in a water bath, separate the æther and add fresh portions until the opium is exhausted, evaporate at the common temperature of the atmosphere, by placing the ætherial solution in a salt-mouth bottle, remove the stopper, and cover the mouth with bibulous paper, to prevent impurities falling in, and protract the evaporation. As the æther recedes, it leaves the sides of the bottle coated with crystals of narcotine, as the solution becomes more dense, the crystals enlarge and accumulate, and the bottom of the vessel is covered with large transparent crystals, accompanied with a brown viscid liquor, and extract, which contains an acid, resin, caoutchouc, &c. Separate these substances from the crystalline mass and wash the salt in cold æther, to separate more effectually the extract or colouring matter. After the crystals have been sufficiently washed, dissolve them in warm æther, evaporate as before, when most beautiful snow white crystals of perfectly pure narcotine will adhere to the sides of the vessel. Those on the sides of the bottle assume plumose and arborescent forms, which, being made up of delicate acicular crystals of a somewhat silky

lustre, exhibit a most beautiful appearance. As the ætherial solution becomes more dense by evaporation, the crystals enlarge, and the bottom of the vessel, as before, is covered with pure narcotine, assuming the rhombodidal prismatic form, with some beautiful modifications of macled crystals. By picking out the largest and most regular crystals and again dissolving them and evaporating and repeating the same process, each time selecting the largest and best crystals, I obtained crystals one-eighth of an inch in diameter, and I believe by continuing in the same manner, much larger might be obtained, as they increase in size by every crystallization.

Resin, Caoutchouc, Oil, and Acid.—These substances are the constituents of the extractive matter which covers the crystals, and is separated in the manner above described; on evaporation it forms an extract without signs of crystallization. This substance appears to possess all the heavy narcotic odour of the opium. The narcotine, when perfectly separated from this substance, has very little odour, and the denarcotised extract and laudanum possesses less; in fact, so little, that it could hardly be detected as a preparation of opium by the odour, the strong odour of the extract arises from the oil of opium which it contains. The activity of Baume's celebrated extract, is considered by Neumann, to reside in the oil and resin. The acid which exists in this compound, has not been sufficiently examined to say any thing definite in relation to it. The characters of the caoutchouc are very prominent. I

have not yet tried the effects of this combination upon animals, nor have I seen any description of it, but judging merely from its sensible characters, it would appear more active than the narcotine.

Morphia.—This substance exists in opium, united with meconic acid; its action on the human body is that of a direct sedative, and possesses all the advantages which we may expect to find in opium, without any of its inconveniences. Different modes for the preparation of this article have been described by Robiquet, Derosne, Choulant, Sertuerner, and others; Dr. Thomson gives an easy method to obtain it in a state of purity. He employs aminonia instead of magnesia to decompose the natural meconiate, &c. (see Annals of Philosophy for June, 1820.) The sedative powers of morphia becomes more manifest when combined with an acid, particularly the acetic, which arises from increasing its solubility. Morphia is very soluble in olive oil, and according to the experiments of Mr. Majendie, the compound acts with great intensity. I am indebted to Dr. Coxe, for the following interesting history of the crystalline forms of its saline compounds.

The *carbonat* crystallizes in short prisms.

Acetate in soft silky prisms, is very soluble, and extremely active—more so than any of its combinations.

Sulphate in arborescent crystals, next in solubility to the acetate, and rather less active.

Muriate in plumose crystals, much less soluble,

when evaporated, it concentrates into a shining white plumose mass on cooling.

Nitrate in prisms grouped together.

Meconiate in oblique prisms sparingly soluble.

Tartrate in prisms.

From either of the above combinations, morphia may be separated by ammonia.

The acetate of morphia is the most active preparation, and as it is a very deliquescent salt, is extremely difficult to obtain in crystals; under these circumstances the following process has been recommended to convert the morphia into the acetate. Take morphia, four parts, distilled water, eight parts; dilute the morphia in a procelain vessel, afterwards add acetic acid, sp. gr. 1.075, or pure concentrated pyroligneous acid until turnsole paper becomes scarcely converted red, evaporate the solution to the consistence of syrup, continue the evaporation slowly, either in the sun or in a stove, collect the salt and reduce it to powder.*

The sulphate is the next most active salt of morphia, and is employed where patients have been accustomed to the use of the acetate, for generally, by varying the salts of alkaline medicines, their action may be kept up longer without increasing the dose too considerably. Formulas for the preparation of the acetate and sulphate in solution, syrup, pills, &c. are given in Hayden's Formulary and Formulaire de Montpellier. The other combinations of morphia with the exception of the citrate, tartrate, and meconiate, have not yet been employed in medicine.

* Pharmacopia Gallica, 1818, p. 387.

Meconic acid exists in combination with morphia n crude opium, forming a meconiate of morphia; t is to this salt that laudanum owes its narcotic effects. Our distinguished chemist, Dr. Hare, has given, in the Philadelphia Journal of the Medical and Physical Sciences, No. IX. New Series, an easy process for obtaining this acid, and also a very delicate est and easy mode of detecting minute quantities of pium in solution; his observations on this subject re well worthy the attention of the chemist and harmaceutist.

Fæculencies, &c.—Fæculencies and insoluble matter consist chiefly of the leaves, capsules, and stems of the poppy; besides these, however, extraneous matters are frequently found, having been fraudulently introduced to increase its weight. The insoluble matter in different parcels of opium vary from one and a half to near three drachms in the ounce.

The effects of opium are generally so well known, hat it is unnecessary to give a description;* it some-

* The following particular account of the effects of opium on the Turks, by Baron de Tott, may be interesting to many readers. Speaking of those who give themselves up to its immoderate use, he says:—Destined to live agreeably only when in a sort of drunkenness, these men present above all a curious spectacle, when they are assembled in a part of Constantinople, called TERIAKY TCHARCHISSY, the market of opium-eaters. It is there that, towards evening, one sees the lovers of opium arrive by the different streets which terminate at the Solymania, whose pale and melancholy countenances would inspire only compassion, did not their stretched necks, their heads twisted to the right and left, their back bones crooked, one shoulder up to the ears, and a number of other whimsical

times, however, exercises very remarkable a singular effects on the constitution, differing ma attitudes, which are the consequences of the disorder, pres the most ludicrous and the most laughable picture. A lo row of little shops is built against one of the walls of the pla where the mosque stands. These shops are shaded by an bour, which communicates from one to the other, and und which every merchant takes care to place a small sofa for customers to sit on, without hindering the passage, who pla themselves in succession to receive a dose proportioned to t degree of habit and want they have contracted. The pills a soon distributed; the most experienced swallow four of the larger than olives, and every one drinking a large glass of co water upon it, waits in some particular attitude for an agree ble reverie, which at the end of three quarters of an hour, an hour at most, never fails to animate these machines, a make them gesticulate in a hundred different manners, b they are always very extraordinary and very gay. This is th moment when the scene becomes most interesting, all the a tors are happy, each of them returns home in a state of tot ebriety, but in the full and perfect possession of an happine which reason is not able to procure him Deaf to the hoo ings of the passengers they meet with, who divert themselv by making them talk nonsense, every one of them firmly b lieves himself in possession of what he wishes; they have th appearance and the feeling of it; the reality frequently doe not produce so much pleasure. The same thing happens private houses, where the master sets the example of th strange debauch. The men of the law are most subject to and all the dervises used to get drunk with opium, before the learned to prefer the excess of wine. There are instances persons getting drunk indifferently with opium or with bra dy. There is a decoction which is made of the shells an seeds of the poppy; this the Persians call *locquenor*, they se it publicly in all their cities, as they do coffee. The Persia say it entertains their fancies with pleasant visions and a kin of rapture; they very soon grow merry, then burst into

rially in its action on different individuals. A case is mentioned in the Archives Générales de Medicine for Dec. 1826, of a lady of nervous temperament, who on taking a draught in which there was half a grain of acetate of morphia, suddenly sunk into a state of syncope, which continued for two or three hours; it was several times repeated at several intervals of an hour or two, and attended with the same results. Dr. DEWEES met with an instance in which the opium invariably purged, and was in the habit of employing it as a purgative in this case, in doses of two grains, purgatives not producing their usual effects; he has also met with one instance in which opium excited violent coughing, even when administered in enema.* Dr. Rousseau informed me he had a case somewhat similar to the former, (an unmarried lady of thirty-four years,) where opium universally acted as a purgative; the denar-

laugh, which continues till they die away in a swoon. It is found by those who have a disposition for jesting to increase that extremely. After the operation of this remedy, the body grows cold, pensive, and heavy; and in this dull and indolent situation it remains till the dose is repeated. It is curious to observe the countenances of those who use this decoction, before its operation, and when its effects have taken place.—When they come into the decoction-house, they are dull, pale, and languid; but as soon as the remedy begins to operate, they are quite changed; they run into all the extravagancies of mirth and laughter, and such an uproar is produced, that it would be more proper to give it the name of the mad-house than decoction-shop.—(CRUMPE *on Opium.*)

* See the Philadelphia Journal of the Medical and Physical Sciences, No. IX. New Series, p. 147.

cotised laudanum administered by Dr. Rousseau to the same patient, did not produce this singular effect, although continued for several days.* This same gentleman also informs me that it is not unfrequent in his practice to meet with cases in which opium acts as a purgative, and has discovered that the addition of tartaric acid increases considerably its purgative effects.

The several preparations of opium as above described, may be procured at Carpenter's Chemical Warehouse, No. 301, Market street, Philadelphia.

It is stated that highly rectified æther is the only menstrua for the solution of narcotine. If this is the fact, I cannot understand how laudanum contains this principle when its menstrua is nothing stronger than proof spirits, and that nearly saturated with the gummy, resinous, and other soluble matters of the opium.

I am about instituting some experiments upon the residue of opium after laudanum has been made, and also upon the matter precipitated from laudanum after long standing, the results of which I hope to submit in a subsequent number of the Philadelphia Journal of the Medical and Physical Sciences.

* Dr. Rousseau has since informed me, that on further continuing the use of the denarcotised tincture, the purgative effects recurred, and he was consequently obliged to suspend its administration.

Additional Remarks on the Denarcotsied Acidulous Tincture of Opium.

Subsequent experiments have decidedly given preference to the acidulous tincture of denarcotised opium, it is certainly one of the most valuable preparations of this article, and is a highly valuable substitute for the black drop, which is preferred to laudanum on account of its small dose, and not producing nausea or the unpleasant stimulating effects of opium, it is, however, objectionable as before stated, for the uncertainty of its strength resulting from the vague and indefinite mode of its preparation. My friend, Dr. Samuel Jackson, of Northumberland has corroborated this statement in his valuable paper in the American Journal of Medical Sciences, No. XI. for August, 1830, page 319, speaking of the use of Dr. Hartshorne's acetated tincture of opium, which is the same as my acidulated denarcotised tincture, with the exception of using common opium instead of denarcotised. He there states, "This is a substitute for the uncertain preparation, black drop, and is supposed to be suitable to those constitutions on which laudanum and common opium act in a well known unfriendly manner, this proposition is true in part only, for while it comforts some of these excitable persons, it distresses others in the usual way of common laudanum. Here, then, we have the most happy resource in the denarcotised opium, which we confidently believe, from much experience brings comfort to all. But "nil omni parte beatum," it occasions costiveness like common laudanum. Whe-

ther this evil, with all the rest, is avoided by Carpenter's acidified tincture of denarcotised opium, we have not satisfactorily ascertained; *but from experience we are ready to believe that it is the best preparation of opium now before the public.*" Numerous testimonies of like import to Dr. Jackson's just given might be cited in favour of this preparation, but its increasing popularity and extensive use among the faculty, will go farther to support its character than any thing which can be written in relation to it.

On the Cultivation of the Poppy and the Manufacture of Opium.

The southern section of the United States is adapted in every point of view for the cultivation of the poppy, and the manufacture of opium; climate, soil and slave population is in every respect favourable, and it is a matter of great surprise that the United States ere this, has not been conspicuous for supplying her own territories as well foreign markets with this expensive, highly valuable and indispensible article of the materia medica. The intimation which I threw out in a former paper, published in our valuable periodical, the American Journal of Medical Sciences, induced several of my medical friends in the South to undertake the experiment, and for this purpose I furnished them with the seed of the papaver somniferum, obtained from Messrs. Landreth's, and I was pleased to hear the first experiment resulted by no means discouraging, and I have not the least doubt but by persevering they

will prove successful, and compensate for labour more than any product now yielded by their soil. Having had frequent applications for an account of the natural history of the papaver, its mode of cultivation, and the manner of preparing the opium, I will give the following succinct statement, for which I am partly indebted to Dr. Crump's treatise on opium. Opium, like Peruvian Bark, has been the subject of considerable controversy; various authors have differed essentially in their views of this article, differing not only in the investigation of its constituent principles and modus operandi, but in the most obvious facts of its natural history. These controversies have now been settled by careful experiments, and the manner of its production and preparation is now perfectly understood, so as to remove difference of opinion on these points.

Opium is produced in various parts of the world. That of our shops is generally imported from Smyrna, and is commonly called Turkey opium, it comes in cakes from four ounces to a pound in weight, and generally in cases of about one hundred pounds or more. There is considerable difference in the quality of this opium as regards its purity, some of it appears to be full of the capsules of the poppy, and other vegetable impurities, leaves, &c. in some instances amounting to as much as twenty-five per cent.; indeed I have seen it in some instances with only sufficient of the inspissated juice to make these impurities in a mass, by giving adhesion and consistence to them; there is also another fraud practised by intro-

ducing foreign substances to increase its weight, such as stones, pieces of lead, bullets, &c. which in some instances amount to a considerable per centage. I recollect once having sent to a physician a few pounds of opium, which externally had the appearance of the best quality, which it was, with the exception of small pebbles, which had been introduced in it when prepared, as its external parts were entire, and of a hard consistence. The physician was highly incensed, and at the spur of the moment he inclosed the rocks, as he called them, to me in a letter, which would have amounted to several dollars postage. He however sent them entirely to the wrong place, and I returned them to him through the same channel, requesting him to send them to the Turks where they had been introduced. I have invariably found the flat pieces of opium to be the best, much more free from impurities, and have frequently found in the same case of opium the flat pieces to break with a short clear fracture, while the thick round pieces were full of leaves and impurities, and I am thus always particular in selecting opium to reject the nodular pieces. Opium is prepared and consumed in considerable quantity over all the warmer regions of Asia, in Egypt and other parts of Africa, where the Mahometon religion prevails, being deprived by the tenets of their religion from the use of wine and ardent spirits, they have recourse to the use of opium. Egypt, and especially the Thebes, was long famous for the quantity and excellence of its opium, and hence the term Thebaic is

still given to some of its preparations. Wherever opium is manufactured, large fields are tilled for the cultivation of the poppy, and the sales of opium constitutes no inconsiderable branch of commerce. The pieces of opium are generally covered with the dried leaves of the poppy, and sometimes with the husks and seeds of some of the lapatha or dock kind—an observation long since made by Dr. Alston. These also enter into the mass of the nodular pieces which constitutes part of the feculencies and impurities.—That opium is the product of the poppy, appears the only fact which writers do not more or less differ in. There are no less than nine species of the papaver, but that from which opium is principally obtained is the seventh or "papaver somniferum," although this species is preferable to the others in consequence of yielding a larger quantity of opium, yet they all afford opium of equal quality, but the smallness of their heads must yield it in much less quantity. Dr. Crump states that he obtained from the papaver rheas opium perfectly similar to that got from the somniferum.

Much difference of opinion prevails as to the manner in which the opium that is imported into Europe is obtained from the poppy, some state that it is obtained from the heads, stalks and leaves by boiling and inspissation, some that it is merely the expressed juice inspissated by heat, and others, that it was obtained from the milky juice by wounding the heads. In those countries where opium is manufactured, that an extract is obtained from the poppy

plant by boiling cannot be denied. Dioscorides* takes particular notice of it, and distinguishes it from the juice obtained by wounding the heads of the poppy, which he says is the true opium, by the name of Meconium. Pliny† makes a similar distinction, as does Kæmpfer in his Amœnitate Exotica, and Bontius in his Medicina Indorum. Many have concluded from the large quantities of opium which is consumed, and from its generally moderate price, that our opium is merely an extract. Of this opinion are Prosper Alpinus‡ Lemery,§ Savory,‖ Condamine¶ and others. I cannot, however, for various reasons accede to it, the only one of its advocates who could determine from actual experience, was Prosper Alpinus, and he probably was led into a mistake, from Egyptians adulterating the real opium with meconium. I lately received from my friend, Mr. J. H. Parmele, of Zanesville, Ohio, an extract from the heads of the white poppy after the opium had been separated in the usual way by incisions. Mr. Parmele sent me rather more than half a pound of this extract, by which I had amply sufficient for full experiments with it, and I found it possessed little or none of the effects of

* De Materia Medica, lib. 4, c. 25.

† Naturali Historia, lib. 20, c. 18.

‡ Medicina Egyptiorum, lib. 4, c. 2.

§ Dictionnaire des Drogues, art. opium.

‖ Dictionnaire de Commerce.

¶ Mem. de l' Academie des Sciences pour l' an. 1732, p. 421.

opium, in small doses it had no effect, and taken in large doses, it rather nauseated than produced any anodyne effects which proves their opium if at all judiciously managed, must be obtained by incision, as the additional quantity which would be obtained by boiling or expression, would only increase the weight, without adding strength, and consequently much reduce the activity of the opium, as also to make it very uncertain, varying according to the quantity of extractive matter which might be mixed with the opium, which would never be uniform, but differ more or less whenever it was prepared. Kæmpfer, who lived two years in Persia, asserts positively that the opium is obtained from the heads by incision and particularly describes the operation. The incision, he says, are made with a fine edged knife in the evening, and the juice being collected next day, is inspissated to the consistence of opium.* A similar account is given by Garcias.† But that opium is obtained by incision, is placed beyond a doubt by Mr. Ker, who has given a very accurate description of the manner in which the poppy is cultivated, and the opium obtained from it by incision, in the province of Bahar, in the East Indies. The seeds, according to him, are sown in quadrangular areas, the intervals of which are formed into aqueducts for conveying water to each area. The plants are allowed to grow six or eight inches from each other,

* Amanitates Exotica, Fasc. 3ta. 15.

† Historiua aramatum and simplicium lib. 1, c. 4.

and are plentifully supplied with water till they are six or eight inches high, when a nutrient compost of dung, ashes, and nitrous earth, is laid over the areas. A short time previous to the appearance of the flowers, they are again well watered, till the capsules are half grown, when the watering is stopped and they begin to collect the opium. The process by which it is effected, is simply by making at sun-set two longitudinal incisions from below upwards, without penetrating the cavity, with an instrument which has two points, which should be as sharp as a lancet, the incisions should be repeated every evening until each capsule has received six or eight wounds, and they are then allowed to ripen their seeds. The juice which exudes is collected in the morning, and being inspissated to a proper consistence by working it in an earthen pot in the sun's heat, is formed into cakes for sale. (See Medical Observations and Inquiries, vol. 5, Article 28; also, in support of the same opinion, Chardin's Travels into Persia.

In addition to this very particular account given by an ocular witness, of the manner in which opium is extracted by incision in the East Indies; we have further proof that the whole quantity produced in Persia, Natolia, and other countries, is obtained in a similar way, from considering that opium may be extracted by incision from the poppies of our own climate, perfectly similar to that imported from these countries; while neither the extract of the poppies produced by boiling, nor the inspissated expressed juice, bear any resemblance to it. These facts, it

appears, were first ascertained by Dr. Alston.* I have myself, says Dr. Crumpe, extracted from our own poppies a pretty considerable quantity of opium, which differs from that of the shops, only in smelling stronger, and being to the taste more bitter and pungent, its superiority, however, in these respects, seemed gradually to diminish. In obtaining it I followed sometimes the method mentioned by Kæmpfer, making five incisions at a time, sometimes that described by Mr. Ker, making but two, and think the one answers in the end just as well as the other. Opium is frequently of a very dark colour, which arises sometimes from the iron instruments employed in collecting it; the chalybeate striking a black colour with the astringent matter of the juice. For when opium (as has been proved by experiment, was collected by making the incisions with a sharp piece of glass, and a shell to collect the juice, it produced opium of a clearer reddish brown than is usually observable.

Notwithstanding that pure opium is obtained by incision alone, it must be admitted that opium is almost always more or less adulterated, and sometimes mixed with the expressed juice, extract of the plant, and other foreign substances. In twelve parts of opium officinarum there will be generally found from three to three and a half of feculencies insoluble in water or alcohol; and Dr. Crump states, that in the opium which he collected, there were but two parts insoluble, which seemed principally composed

* Medical Essays, vol. V.

of the external cuticle of the capsule which was separated in scraping off the juice. I have no doubt it might be collected perfectly pure by a little more care in its preparation, or the juice might be strained when liquid, or rendered more limpid by the addition of a little spt. of wine, by which it could be filtered and inspissated in the sun as usual; and I would particularly suggest to those who may think proper to cultivate the poppy and prepare the opium, to be very particular in getting it as free from feculencies as possible, and thus let the American opium be distinguished for its purity. I have remarked that the English opium was much superior to the Turkey, being much purer, and more active in the same doses, and producing more morphia, and commanding a higher price in the market, which arose entirely in consequence of the particular care in its preparation. Mr. Ker supposes that the poppy may be cultivated to advantage on ground of little value. An acre, he says, yields in the East Indies, sixty pounds of opium, which at the usual price, would be between 2 and 300 dollars. I have no doubt it might be made to yield nearly the same amount in this country; the experiment, at all events, may easily be made, and seems worthy of attention. If any overplus remained after our own demands, a ready market would be found for it in the East Indies, where its consumption is very considerable, and price generally high. Several of my medical friends have successfully prepared the opium from seeds which I sent them. Dr. Chas. S. Lucas, of Mount Meigs,

Alabama, cultivated the poppy and prepared opium fully equal to the Turkey, and if the price of labour was less expensive, he informs me he could advantageously cultivate it in preference to cotton, which is the staple commodity of that country; my friend Dr. A. Jones, of Lexington, Georgia, to whom I sent some of Messrs. Landreth's seeds, has also been successful in his experiments. I am indebted to him for the following interesting facts in relation to the same, as extracted from his letter to me, of July 12th, 1830:—The seed came to hand about the middle of March; about the end of the same month I sowed on a square of my garden, about half of the seeds you sent me, reserving the balance till later in the spring. The piece of ground I sowed the first seed on, was of a light, loose, and rather sandy soil, which was well manured for the purpose, and comprehended a space of about twenty-five feet long by ten or twelve feet wide. They were sown and covered shallow, and came up very thick; so much so that I had to thin out more than one half; they were drilled in rows about eighteen inches or two feet apart. By working them they grew up very finely and flowered by the first of June; by the fifteenth of the same month the capsules were sufficiently matured to allow incision. I made my incisions diagonally up and down the heads; I found if I made them longitudinally, a great deal of juice would fall from their heads to the ground. I repeated the incisions until six or eight were inflicted, I then left them to go to seed. I also left a large number of heads for

seed, without interrupting them. Soon after I began my incisions a severe drought set in, in this part of the state, which parched up the leaves of my plants, and caused the further growth of the heads to cease; many of them withered and died while young and tender, so that I do not think upon the whole, that I gathered half the opium which I could have done under favourable circumstances. The other half of the seed I planted in the same kind of soil, and not one of them came up; I distributed a few of them among my friends, but none of their seed came up.* From the first seed I planted I procured one fourth of a pound of good hard opium, and one and three quarters of a pound of seed. I would send you a specimen of my opium if I had a good opportunity. Many of the capsules attained the size of a common man's fist. I am sure one hand could cultivate as much ground in poppies as he could in cotton. My experiments have not been sufficiently extensive to say how profitable may be its culture in the south, they have however been thus far very flattering and encouraging. It will be some time however before it will be extensively raised, as people change very slowly from one object of cultivation to another. Since I gathered my seeds, I have placed parcels in several physicians hands, who have promised to make very careful experiments with them so that the success of their profitable culture will be fully tested in a short time.

* This has resulted in consequence of the seeds having been sown too late in the season, but as they lay uninjured in the soil during the winter, they will come up the ensuing spring

My ingenious friend, I. H. Parmele, Esq. of Zanesville, Ohio, has also successfully experimented upon the poppy, and prepared opium fully equal to the best Turkey. He informs me that incisions on the head of the poppy are immediately followed by a copious flow of juice, which gradually concretes, it can be taken from the head a short time after it flows, as it soon becomes indurated, but even after it has become inspissated to a proper degree to be removed from the heads, the loss of weight is very great. In one instance I weighed carefully a fresh gathering from the heads, and found it weighed 106 grains, in twenty-four hours after I weighed the same again and found it to be 44 grains, so that the loss was 62 grains.

The great desideratum is expedition in making the incisions, to be effected by some implement that shall encompass the heads, adapted to any size, and which will incise them all around at one stroke; it should consist of a circle of elastic lances, to proceed conically from a stem; the lancets to be guaged at the end, and furnished with guards, and encompassed with a sliding ring by which the lancets could be held adjusted to the size of a poppy head as they were pushed down over it. It should be made of the best steel and well tempered; this instrument once made and successfully applied, would give a new impulse to the cultivation of the poppy. I have a fine piece of land selected, which I design for the cultivation of the poppy, and will commit to you the result of my experiments.

I think it an object for our southern planters to turn their attention to the cultivation of the poppy, as prospects of the successful manufacture of opium in this country are very encouraging, and all the experiments which have yet been made upon the subject, have produced the most favourable results.

OBSERVATIONS AND EXPERIMENTS

ON

PERUVIAN BARK.

The cinchona, or as it is more generally denominated, Peruvian Bark, is the product of several species of the genus Cinchona, which in botanical arrangement, belongs to the class Pentandria, order Monogynia, and to the natural order Contorta.

The descriptions of the species of this genus, from the limited and imperfect nature of the information possessed, have been generally so confused and indefinite, as to convey little or no information.

Cinchona is found in various parts of South America, always inhabiting mountainous tracts, where it grows from a few inches in diameter to the thickness of a man's body. The bark is collected in the dry season, say from September till November, and after being well dried in the sun, is packed up in skins, forming what is called *seroons*, weighing from fifty to one hundred and fifty pounds.

Several species are frequently mixed together in these seroons, which are afterwards separated, according to quality; it is not, however, uncommon to find several species mixed together on their arrival at our markets. The tree has never yet been cultivated by the Spaniards, who procure it by stripping

the natural trees of their bark, which ultimately must destroy the genus, as they always die after the operation.

Most of the varieties of cinchona being highly valuable, and consequently very liable to be adulterated with various substances, it is therefore important to adhere to a critical examination of all its characters.

The accounts of the discovery of cinchona are very numerous, and many from their singularity and improbability, are no doubt founded in fiction. It has long been esteemed a valuable medicine in Peru, where it is said the natives have adopted its use, from observing that animals recur to it. Be the source of its first employment what it may, it was not used by Europeans until the year 1640, when the countess Cinchon, wife of the Spanish viceroy, was cured of the ague by means of it, and hence the derivation of its name, cinchona. As frequently occurs on the introduction of any *new remedy*, considerable noise was made, and opposition raised against it by several eminent physicians; but when admitted to proper experiments, its efficacy soon suppressed the groundless clamor which had been too hastily excited.

The principle, says Dr. Paris, on which the tonic and febrifuge properties of bark depend, has ever been a fruitful source of controversy. Deschamps attributed it to cinchonate of lime. Westering considered tannin as the active principle; while M. Seguin assigned all the virtues to the principle which precipitates gallic acid. Fabroni concluded from his experiments, that the febrifuge power of the bark

did not belong exclusively and essentially to the astringent, bitter, or to any other individual principle; since the quantity of these would necessarily be increased by long boiling; whereas the virtues of the bark are notoriously diminished by protracted ebullition.

Perhaps no vegetable substance, underwent so many analyses, by the most distinguished chemists of Europe, as the cinchona; and yet so little positive knowledge was obtained of its true constituents, and such was the very obscure condition of our information of the active principle of cinchona, when the scrutinizing, critical and successful researches of Pelletier and Caventou, detected the existence of two salifiable bases, in peculiar states of combination, in the different species of cinchona. The medical profession is therefore indebted to these intelligent and enterprising chemists, for one of the most valuable additions ever made to the materia medica.

Among all the late discoveries in vegetable chemistry, there is none which claims so much attention from extensive usefulness, as that of quinine. This principle contains all the tonic and febrifuge properties of Peruvian bark, in their most concentrated state. By the substitution of this preparation for the crude bark, the physician can conveniently administer it to the most delicate constitution, in an eligible form, and by no means an unpleasant dose, what previously was considered the most nauseous and disagreeable medicine, and frequently, from its bulky

nature, (when administered in less than ordinary doses,) was rejected by the stomach.

In consequence of the prevailing endemics, ague and remittent fevers, which, of late years, have visited almost every section of our country, the article *cinchona* has increased very much in practice and demand, and become one of the most important articles of the materia medica.

The descriptions which have been given by most authors, to distinguish the many species and varieties of this extensive and important genus, are so imperfect and confused, that they tend rather to involve research in more dense obscurity, than to develope any information. It is admitted, there is no method so well calculated to ascertain, with any degree of certainty, the comparative activity of the different species of Peruvian bark, as that of analysis; and from this circumstance, I have made trial of some of the most important species, which now occur in our commerce, for the purpose of determining their qualities, which I have done by extracting the alkaline principle, upon which their virtue as a medicine entirely depends, and from the product of which, their comparative strength may be accurately and readily ascertained.

It is a source of regret, that many of our country physicians so little appreciate the quality of cinchona, as to be governed entirely by the price, which from the following statement, will appear to be the most remote and inaccurate grounds for calculation, as the cheapest or lowest priced bark in the market, is

far dearer to the practitioner, and particularly to the patient, than that which commands the highest price; for it not only requires the patient to swallow twelve times the quantity to produce the same effect, independent of the loss of time, but also by charging the stomach, when in a weak and debilitated state, with so large a portion of ligneous and insoluble matter, may give rise to diseases more serious than those for which it was administered as a remedy.

The bark of commerce, in this country and in England, is generally designated under the limited nomenclature of red, pale and yellow. There are now no less than twenty-five distinct species of cinchona, independent of any additions we may owe to the zeal of Humboldt and Bonpland, as well as of Mr. A. T. Thompson, who states, that in a large collection of dried specimens of the genus cinchona in his possession, collected in 1805, both near Loxa and Santa Fé, he finds many specimens which are not mentioned in the works of any Spanish botanist.

Dr. Paris, in his valuable Pharmacologia, justly remarks, that notwithstanding the labours of the *Spanish botanists*, the history of this important genus is still involved in considerable perplexity; and owing to the mixture of the barks of several species, and their importation into Europe under one common name, it is extremely difficult to reconcile the contradictory opinions which exist upon this subject. Under the trivial name officinalis, Linnæus confounded no less than four distinct species of cinchona; and under the same denomination, the Bri-

tish Pharmacopœias for a long period placed as varieties, the three barks known in the shops; this error indeed is still maintained in the Dublin Pharmacopœia, but the London and Edinburgh colleges, have at length adopted the arrangement of Mutis, a celebrated botanist who has resided in South America, and held the official situation of director of the importation of bark for nearly forty years.

The apothecaries of this country and England, at the present day, distinguish the denomination of their bark, by terms expressive of the colour; and it is a source of still greater surprise, to find the orders and prescriptions of some of our most intelligent physicians, designating the species of bark they wish to employ, by no other than one of the terms signifying red, pale or yellow; thus reducing the extensive genus cinchona, of not less than twenty-five species into three varieties, and leaving it entirely to the discretion of the apothecary, to give him any species, of a colour correspondent to that ordered. Independent of the great insufficiency of these terms to distinguish the numerous species, the colour of the powder, is one of the most uncertain and inaccurate methods which could be adopted, of classing or assorting the cinchonas; as under the same denomination, the best species of bark in commerce, (calisaya arrollenda,) would be confounded with the most inferior, (carthagena,) as the colour of the powders of both is yellow; hence a physician writing for yellow bark, leaves it to the choice of the apothecary, to give him what species he may think proper, of a cor-

respondent colour, but varying in quality from calisaya to carthagena, or in medicinal activity as from 12 to 1.

The importance therefore of adopting terms more definite to distinguish the several species of Peruvian bark must be obvious, and that the botanical nomenclature of these species is imperfect and inadequate, is equally so. The quality of Peruvian bark appears to be modified and influenced by locality, produced by difference in soil, altitude of situation, exposure, or some other circumstances peculiar to the location, hence the different provinces of Peru afford bark differing very materially in their physical characters and particularly in the activity of their medical qualities, from which circumstances it would appear that a nomenclature derived from the names of the provinces in which the different species grow, would be a systematic arrangement.

The following are some of the most important species which now occur in commerce, which I have submitted to experiments, and have given to each the comparative proportion of quinine and cinchonine which they respectively contain. The names which are given to distinguish these several species, are derived from the provinces in which they grow, which at present, (in consequence of the confusion in the botanical history and arrangement of cinchona,) is the most direct and certain mode of distinguishing those species of bark which now are found in our shops.

Calisaya Bark—two varieties.

Of this very important species there are two varieties in commerce.

1st. Calisaya arrollenda, (Quill Calisaya). This variety is in quills from three quarters of an inch to an inch and a half in diameter, and from eight inches to a foot and a half in length. The epidermis is thick and may be readily removed from the bark; and hence you find in the seroons or cases a great proportion deprived of this inert part. It is generally imported in seroons weighing about one hundred and fifty pounds, and very seldom comes in cases; it has many deep transversal fissures running parallel, the fracture woody and shining, the interior layer is fibrous and of a yellow colour, and the taste is slightly astringent and very bitter.

This species of bark will yield a much larger proportion of the active principle, (quinine,) than any other bark in commerce, and consequently may be justly esteemed the best.

2nd. Calisaya Plancha, (Flat Calisaya). This variety consists of flat, thick, woody pieces, of a reddish brown colour, deprived of its epidermis, and the interior layer more fibrous than that in the quill. This variety yields from twenty to twenty-five per cent. less quinine than the arrollenda, and is consequently a less desirable article.

Superior Loxa or Crown Bark.

Loxa is the name of the province and port, where this bark is obtained and from which it is exported. In this province cinchona was originally discovered. This bark has been highly esteemed by the royal family, and is that which has been selected for their use; hence, the name of Crown Bark. The following are the characters which distinguish this bark.

The Loxa bark occurs in small quills, the longitudinal edges folding in upon themselves forming a tube about the circumference of a goose quill, and from half a foot to a foot and a half in length. It is of a greyish colour on the exterior, and covered with small transverse fissures or cracks, the interior surface is smooth and in fresh or good bark, of a bright orange red; it is of a compact texture and breaks with a short clean fracture, it is the bark of the cinchona condamina, and is known at Loxa by the name of cascarilla fina. Yet, notwithstanding this bark appears to have held the decided preference to all other species, analysis fully indicates that it is not equal in medicinal strength by at least twenty-five per cent. to that denominated *Calisaya;* this bark is more astringent and less bitter than the calisaya.

This species yields from twenty-five to thirty per cent. less cinchonine and quinine, than the caylisaya arrollenda does quinine, and the proportion of cinchonine is much greater than that of the quinine.

Cinchona Oblongifolia or Red Bark.

The above term appears to be more applicable to the species in question, than any other which can be selected, as under that denomination the best red bark has always been well known, and as there is but one other species affording a red powder, it is not likely to be confounded. The inferior red bark of which there is a considerable quantity in our market, is no doubt more frequently obtained by colouring low priced yellow bark, than from the product of a distinct species.

There is but one species of bark in addition to the Oblongifolia as before stated, producing a red powder which is called Rosea, and as that species is seldom or never known in our commerce, there can be little or no powder produced by it; hence, all the inferior kinds of red bark of which there is no small quantity to the discredit of those who sell it, evidently must be either such of the Oblongifolia as has been rendered almost inactive, by age, weather, or some other exposure, or as before surmised, is inferior yellow bark, coloured; and as the product of the former must be small, it in all probability proceeds from the latter source; hence the *price* of red bark is as various, (and the *qualities* corresponding *with* the prices,) as the yellow bark, although the number of species of which we are acquainted is not one eighth the number of the latter.

The cinchona oblongifolia is the magnifolia of the

flora Peruvianna, and is known in Spain by the name of Colorada, and is what constitutes the red bark of commerce; it occurs generally in large thick pieces, being the product of the largest tree of the genus *cinchona*. There are two varieties of this species.

1st. Colorada Canan, or Quill Red Bark which occurs in quills of various diameters, from one fourth of an inch to two inches in thickness. The epidermis is white or grey, with transversal fissures or watery concretions of a reddish colour, the interior is of a brick red colour, the cross fracture short and fibrous, the longitudinal fracture compact and shining, the taste not so bitter as that of the calisaya.

2d. Colorada Plancha, or Flat Red Bark. This bark is in very large thick pieces, from half an inch to two inches in thickness, and from one to two feet in length, the epidermis brown, thick and rugged with cracks running in various directions. The fracture very fibrous inside, is of a deep brick colour, the taste is less bitter than that of the quill, and of course much less so than that of the calisaya.

These two varieties frequently come in the same seroon, and from their appearance are no doubt the product of the same species, or perhaps the same tree; the quill being produced by the branches, and the flat thick pieces from the trunk, or the former from young and the latter from older trees.

This bark is generally more scarce in our market than the yellow or pale, and commands a higher price; within a short period however, about fifty

seroons of this bark have been imported from Guayaquil by Mr. John R. Neff, which has in a small degree influenced the price of the article. I am informed by a respectable druggist of this city, who has been a long time established in business, that this is the only arrival in quantity, of red bark, direct from South America within his recollection, the supplies heretofore having been received from Europe. These seroons averaged about one hundred pounds each. The bark was very fresh and of a very superior quality. The large flat pieces and quills were indiscriminately mixed and in some seroons in very nearly equal proportions. This bark when first received, was of a very deep and bright colour, and particularly the powder produced by the flat pieces; after being exposed however, in a dry place for about six months, it faded considerably, insomuch that any one not in possession of the proof of the fact, would have doubted whether the powder had been produced from the same bark.

From experiments on the above bark, I procured twenty per cent. less cinchonine and quinine, taken together, than the amount of quinine produced by the same quantity of calisaya arrollenda bark; and the proportion of cinchonine, was rather more than half of the product of quinine.

It will appear therefore, from what has been said, that notwithstanding the great prejudices, both of eminent authors and skilful practitioners, which have so long existed in favour of the superiority of the *oblongifolia*, (red bark,) over other species; that it

is decidedly inferior to the *calisaya*, (yellow bark,) as the whole product, as before stated, of its active principles, does not equal that of the calisaya and cinchonine, constituting rather more than half the product, which, according to an eminent author, is five times less active than the quinine; this point however, I think is very far from being settled. An interesting paper was read before the Academy of Medicine at Paris, which is published in the Bulletin des Sciences Medicales, for November, 1825, in which M. Bally states that he has experimented upon the sulphate of cinchonine, with a view to determine its febrifuge qualities. He administered this sulphate in twenty-seven cases of intermittent fevers, of different types, in doses of two grain pills, giving three or four in the interval of paroxysms; by which treatment he cured the disease as effectually and as speedily as with the quinine: of which twenty-seven cases, there were sixteen tertian, nine quotidian and two quartan. He remarked further, that the cinchonine has properties less irritating than those of quinine, and that consequently its employment should be more general, and preferred in all simple cases. I believe few or no experiments have been made by the physicians of this country upon the medical properties of the cinchonine; it consequently must be very little known by them from their own experience, but it certainly is a medicine which deserves at least a trial.

From the preceding description, the several species of Peruvian bark most commonly met with at

the present day, may be readily recognised, as the physical characters are prominent and distinctive in each variety; after however selecting the best species of Peruvian bark, by the several distinguishing and specific characters, one very important adventitious condition yet remains to be investigated. It is a fact established beyond controversy; that age is a very powerful agent in deteriorating the active properties of bark, insomuch that the best species of Peruvian bark when old, is little superior and sometimes even inferior to the Carthagenian bark when fresh; hence it is, that large parcels of a superior species of Peruvian bark, which would have commanded two dollars per pound at Cadiz, when fresh, has been offered publicly in this city for one-eighth the sum, twenty-five cents, and that without a purchaser; and which it appears has been operated upon by no other unfavourable circumstances but age. In what manner or by what process age, or rather the circumstances connected with it, act upon bark other than by a combination with oxygen or a volatilization of its active principle, I know not. Fabroni states with truth, that cinchona loses its solubility, and consequently its activity, by long exposure to the air, but does not give his opinion as to the manner in which it is thus affected. I cannot, however, conceive under existing circumstances, how the solubility of Peruvian bark can be diminished, except through the agency of oxygen, and it is by this means the extract of bark, prepared according to the common formulas of our dispensatories, is rendered devoid of

utility; for owing to the oxigenizement of the extractive matter, the solubility of the extract is so diminished during its formation, that scarcely one half is soluble in water.

From a number of experiments which I have made upon Peruvian bark in different states, I have observed as an unequivocal result, that the same species of bark which when fresh is very productive of quinine, when old will produce little or none of this active principle, upon which its virtue as a medicine entirely depends.

It will appear therefore an important duty, critically to examine the state of bark as to age, and it may perhaps be useful in this place, to describe the physical characters of bark in this state, and by which it may be readily known. The prominent features which characterise old bark, and distinguish it from recent, are the following. Old bark has lost nearly all that bitter and astringent taste and peculiar aromatic odour, which are such prominent characteristics of recent bark of good quality. The specific gravity is also sensibly diminished, and the fracture instead of being shining and compact, is dull, fibrous, and of a loose texture, and the colour very frequently passes from a bright orange to a dull brown, as the bark advances in age, particularly if much exposed. By attention to these few conspicuous characters, taste, smell, specific gravity, fracture and colour, no mistake can arise in the selection of good bark, unless there is a gross deficiency in judgment. Yet notwithstanding the distinguishing characters of Peru-

vian bark in these two states are so prominent and striking, we regret to say, that gross mistakes have been made public in this particular, by men whom we might suppose most capable of appreciating the quality, under the influence of every incidental circumstance.

Dr. Paris in the sixth edition of his Pharmacologia, makes the following remarks under the article cinchona. The frauds committed under this head are most extensive; it is not only mixed with inferior bark, but frequently with genuine bark, the active constituents of which have been extracted by decoction with water. In selecting cinchona bark, the following precautions may be useful; it should be dense, heavy and dry, not musty, nor spoiled by moisture; a decoction made of it should have a reddish colour when warm, but when cold it should become paler, and deposit a brownish red sediment. When the bark is of a dark colour, between red and yellow, it is either of a bad species or it has not been well preserved. Its taste should be bitter, with a slight acidity, but not nauseous nor very astringent; when chewed, it should not appear in threads nor of much length, the odour is not very strong, but when bark is well cured it is always perceptible, and the stronger it is, provided it be pleasant, the better may the bark be considered. In order to give bark the form of quill, the bark gatherers not unfrequently call in the aid of artificial heat, by which its virtues are deteriorated, the fraud is detected by the colour being much darker, and upon splitting the bark, by

the inside exhibiting stripes of a whitish [illegible]
In the form of powder, cinchona is always found more or less adulterated. *This must be [illegible] as applying to the English market.* During [illegible] official inspection of the shops of apothecaries and druggists, the censors repeatedly met with powdered cinchona having a hard metallic taste, quite foreign to that which characterises good bark.* The only test of the goodness of bark, is afforded by the quantity of cinchona or quina that may be extracted from it; and the manufacturer should always institute such a trial before he purchases any quantity, taking a certain number of pieces indiscriminately from the bulk.

Before concluding, it may not be out of season to remark, that the sulphate of quinine, as it is generally termed, is not a perfectly neutral salt, but in the state of a sub-sulphate, and is only partly soluble in water. Its exhibition in water, is rendered much more eligible by the addition of a drop of sulphuric acid to each grain of the salt, which makes a perfectly transparent solution, and which, I think, from its obvious advantages, should entirely supercede the common formula: with sugar and gum arabic, a few grains of citric or tartaric acid will have the same effect in dissolving

* Mr. Thompson has suggested the probability of this circumstance having arisen from the admixture of a species of bark, lately introduced into Europe from Martinique, resembling the *cinchona floribunda*, and which by an analysis of M. Cadet was found to contain iron.—London Disp. Edit. 3, p. 247.

the quinine as the sulphuric acid, and has been preferred by some.

Dr. Parris,* on the exhibition of quinine, states that he lately saw a prescription in which the salt is directed to be rubbed with a few grains of cream of tartar, and then to be dissolved in mint water. This, he continues, is obviously injudicious, since tartaric acid decomposes the sulphate, and occasions an insoluble tartrate which is precipitated.

With due deference to the exalted judgment of Dr Paris, I must however, on the following grounds, dissent from his opinions. The cream of tartar is objectionable, merely from the circumstance that the active part of the compound may be obtained in a more direct and speedy process by the tartaric. The combination of cream of tartar and sulphate of quinine in the above prescription, does produce decomposition as Dr. Paris has observed, but the virtue of the medicine is not in the least effected by it, and the precipitate, instead of being an insoluble tartrate of quinine as he observes, is sulphate of potass; tartrate of quinine is a very soluble salt, and is held in solution while the water becomes slightly turbid by the precipitation of sulphate of potass, which however from its extreme minute division is speedily taken up by the water, when you have a transparent solution of tartrate of quinine and sulphate of potass, and as the latter answers neither a good nor a bad purpose, it of course can very conveniently be dispensed with,

* Pharmacologia, Edit. 6, vol. ii. p. 163.

and therefore, as before stated, the tartaric acid should be preferred as having a more speedy and direct action.

Piperine has proved a valuable adjunct to quinine; equal proportions of each will act with much more energy than the whole quantity of quinine or piperine alone. Dr. Chapman informs us, he met with much success in the treatment of intermittent fevers by employing the following prescription.

R. Quinine grs X
Piperine grsX
M. ft. Pill NoX

One to be taken every hour in absence of fever.

Oil of black pepper is much more active than piperine, one drop being fully equal to three grains of piperine, three drops of oil of black pepper added to ten grains of quinine, will greatly increase the powers of this remedy, oil of black pepper alone is a valuable stimulant in typhus fever, and is a valuable adjunct to many medicines.

All the preceding varieties of bark, sulphate of quinine, cinchonine, and all the preparations of bark and quinine, may be procured at Geo. W. Carpenter's Chemical Warehouse, 301 Market street, Philadelphia.

Note.—An alkaline substance somewhat analagous to quinine, has recently been discovered in the cornus florida, which has been denominated cornine, and which has been very carefully and accurately described by Dr. Samuel G. Morton in the Philadel-

phia Journal of Medical and Physical Sciences. From the most respectable sources in the medical profession, from various parts of the United States where the article has been sent, the most favourable accounts have been received of the unequivocal success of the cornine in the treatment of intermittent fevers in the same doses as the quinine, and the only circumstance which precludes its competition with that substance, is the extremely minute comparative proportion of cornine yielded by the cornus florida.

OBSERVATIONS

ON A NEW PREPARATION

OF

BALSAM COPAIVA.

Balsam Copaiva being a medicine used in the practice of almost every physician, its characters, effects and uses are consequently familiar to them. It is admitted by all, to be one of the most nauseous and disagreeable articles of the materia medica. Disguised or mixed as it may be, its unpleasant nature is still manifest, and little if at all diminished, communicating its nauseous taste and imparting to the breath its disagreeable odour which is experienced for several hours after each dose, and frequently acting as an emetic, or cathartic.* From these circumstances, its use is frequently abandoned in cases

* Our distinguished Professor of Practice, in the 1st volume of his Therapeutics, page 417, observes, that two circumstances frequently interfere with the exhibition of copaiva, and detract from its utility. It sometimes purges, and when it does, its efficacy is lost or greatly diminished. If laudanum does not check this injurious tendency, it must be discontinued till the bowels recover their tone. To the stomachs of some persons the copaiva is so exceedingly offensive, that it cannot be retained. As it is hardly possible to disguise the taste of the article, it is sometimes very difficult to overcome this prejudice.—See Chapman's Therapeutics.

where it otherwise would be of the highest utility, and even where it is almost indispensable, and other remedies much less efficient are substituted, thus protracting the cure which would have been speedily effected by the copaiva.

Since the introduction of this remedy down to the present period, it has ever been a desideratum to obviate these inconveniences, and it is a circumstance not less unfortunate and much to be regretted, *than* it is singular in its character, *that* amidst the rapid march of improvement and discoveries, (which form a peculiar character in modern chemistry and pharmaceutical knowledge,) an improvement in the exhibition of copaiva, should so long have evaded the vigilant researches of the critical and scrutinizing chemist, and pharmaceutist. With these premises, I feel happy to inform the medical faculty that I have succeeded in consolidating copaiva to a proper consistence, for being formed into pills. The consolidated copaiva is the oil and resin united, and consequently possesses all the properties of the balsam. It may be made into four grain pills, and one or two pills taken three times a day; two pills are equal to thirty drops of the balsam. These pills may be taken without the least inconvenience, neither communicating taste, nor imparting odour to the breath, it is also retained without the least disquietude or uneasiness to the stomach, and I am informed by Dr. Rousseau, that in large doses it does not purge.

This article differs, very essentially, from what is termed extract, or resin copaiva, being not in the least

deteriorated in the preparation, nor at all weakened by admixture of any foreign substance for the purpose of giving consistence. It is particularly recommended to the faculty for its numerous advantages over the *balsam*, and all its preparations. As the oil of copaiva is an active preparation, it is the best mode of using this article, for being united with the resin it may be made into pills which can be taken without experiencing the nauseating taste of the oil, while the oil alone cannot be taken otherwise than in draught, which will subject it to the same inconveniences with the fluid balsam, having its disagreeable taste with its unpleasant effects.

The consolidated copaiva is manufactured and sold at Geo. W. Carpenter's Chemical Warehouse, No. 301, Market street, Philadelphia.

OBSERVATIONS ON A NEW VARIETY

OF

PERUVIAN BARK,

WITH SOME REMARKS

On the Alkaline Bases, Quinine and Cinchonine.

Peruvian bark, one of the most important articles of the materia medica, embraces a number of species, in the medicinal qualities of which there is a vast disparity. It is therefore peculiarly unfortunate that its natural history and classification should be so enveloped in ambiguity, the nomenclature of the different species so inadequate and defective, and the various writers so opposed in their opinions on the subject, as to render the investigation of the student from books almost fruitless. The attention of our pharmacologists should be particularly directed to the cinchona, for the purpose of determining a specific classification of those species now occurring in commerce, and of establishing a nomenclature for them, by which each variety could be readily particularised, and at once understood by its name, which, in its present unsettled history, is impossible. In the Philadelphia Journal of the Medical and Physical Sciences, Vol. XI. I called the attention of the faculty to this subject, and described the several

species of Peruvian bark which then occurred in commerce, as carefully and accurately as possible from specimens before me, so that the several species might be readily known and contradistinguished. I then suggested, as the most appropriate nomenclature, the names of the provinces in South America from which the different species were collected, as Calisaya, Loxa, &c. &c. and which I am pleased to find, has become generally adopted, and is now the most familiar mode of distinguishing the barks of commerce. The terms Calisaya, Loxa, and Carthagena, conveys at once the particular kind of bark, and is perfectly understood, while the terms lancifolia and cordifolia involve in ambiguity as to the kind intended, inasmuch as several varieties of different qualities come under the same term, and it is impossible to determine which is intended; for example, the Calisaya and Carthagena, (the former the best, and the latter the worst species in commerce,) being both yellow bark, would come under the name of cordifolia; hence, if cordifolia was ordered, it would be difficult to determine whether the Carthagena or Calisaya was intended, or some intermediate quality.

Having devoted considerable attention to this valuable article of our materia medica, I have determined to describe every new species which I may meet with; and as there has appeared, since my description of Peruvian bark alluded to, a species not hitherto observed in our market, and unnoticed by any of the writers on the subject, I propose to des-

cribe it in the present communication. This bark I denominate Maracaibo, being brought from that place, generally in bales from seventy to one hundred pounds, and the importation of it is likely to be continued, so that we may calculate upon a regular supply. This bark is much superior to the Charthagena or common bark, producing more than double the amount of saline matter composed of cinchonine and quinine; also a larger quantity of extractive matter than the latter, and is therefore of at least more than double the value of the same. As the former can be purchased at the same price as the latter, it will be advantageous for the practitioner to be acquainted with its distinguishing characters, that he may be enabled to discriminate it among the different species and varieties of common bark.

It occurs in flat, short, and broken pieces, as if separated from the tree with difficulty, mostly of from one to three inches in length, and half to one inch broad, and rather thinner than Carthagena bark. Occasionally small quills are found, the longitudinal edges folding together, forming tubes from a fourth to a half inch in diameter. It is of a deep yellow colour; the epidermis is extremely thin, smooth, of a light gray colour, and is generally removed from the bark. It may be distinguished from the Carthagena bark, by being more compact, by breaking with a short and cleaner fracture, and more particularly by its taste, which is much more intensely bitter. It is quite as strong a bitter as the Loxa

bark, but does not possess the astringency of the latter. The internal layer is fibrous, but in a less degree than the Carthagena. This bark has only appeared in our market within a year or two, and as it will supply the place of a much inferior article, is of high importance to the profession.

The quality of barks depend unquestionably upon the product of cinchonine and quinine they respectively contain, and the separation of these alkalies, is a very valuable mode of discovering with precision the comparative quality of different species of bark. Different barks, however, produce various *proportions* of these two salts; thus we find the Calisaya produces most quinine, the Loxa most cinchonine, and the red or oblongifolia both these salts in nearly equal proportions. What is the comparative value of these two salts is yet a subject of controversy, a considerable majority however are in favour of the quinine, perhaps because most of them have not had an opportunity of employing the cinchonine. Dr. Paris goes so far as to state that cinchonine is five times less active than quinine, others contend the reverse. In an interesting paper read before the Academy of Medicine at Paris, and published in the Bulletin des Sciences Medicales, for November 1825, M. Bally states that he has experimented upon the sulphate of cinchonine, with a view to determine its febrifuge qualities. He administered this sulphate in twenty-seven cases of intermittent fevers of different types, in doses of two grain pills, giving

three or four in the interval of paroxisms, by which treatment he cured the disease as effectually and as speedily as with the quinine, of which twenty-seven cases, there were sixteen tertian, nine quotidian, and two quartan. He remarks further, that the cinchonine has properties less irritating than those of quinine, and that consequently its employment should be more general and preferred in all simple cases; I believe few or no experiments have been made by the physicians of this country upon the medical properties of the cinchonine, it consequently must be very little known to them, from their own experience. It most certainly deserves at least a trial.

The high price which the sulphate of quinine has always commanded, and the increasing demand which its character and reputation has constantly kept up, has been an inducement for imposition and fraud; and it is much to be regretted that this valuable article of our materia medica, like others of an expensive kind, has been mixed with foreign substances of inert character, for the base consideration of reducing the cost and enhancing the profit on its sale, and all this at the expense of the health of the suffering patient, and to the great disappointment of the practitioner, and not unfrequently to the injury of the general character and reputation of the genuine medicine. It is of high importance therefore to be acquainted with the most efficient means of testing its character, where we have any doubts of its purity. The following are the characters and

properties of the sulphate of quinine, and the most simple and effectual method of discovering fraud and adulteration in its composition.

1st. The sulphate of quinine must be soluble in rectified alcohol at a moderate heat, and if it contain sulphate of lime, soda, potash or any other substance insoluble in alcohol, the adulteration will easily be detected.

2d. It is soluble in acidulated water; say one drachm of sulphuric acid to an ounce of water, which will readily dissolve the quinine. By this means if there is any stearine or acid margaride, (substances prepared expressly for adulterating this article,) they will float on the surface.

3d. It should give by sal ammoniac a white precipitate rather flaky, which is soluble in alcohol, and which on being exposed to a gentle heat, will consume without leaving the least residuum.

4th. After having dissolved it in acidulated water, it can be decomposed by means of a little sal ammoniac, it must then be filtered and evaporated. If sugar has been introduced into it, it will be easily detected by the taste, or by fire, which will produce its peculiar odour.

5th. If a white substance, insoluble in cold water, be found in the sulphate of Quinine, heat the mixture to about 170 degrees of Fahrenheit. This will render the starch soluble, and its presence may be determined by the addition of an aqueous solution of iodine, which will immediately occasion a blue

colour, and eventually a blue precipitate. The iodine must be added in very small quantities, and very slow, or the experiment will fail.

Physicians will be supplied with specimens of all the species of Peruvian bark which occurs in commerce, neatly put up in bottles, with a full description of each, with a treatise on cinchona, for *Five Dollars*, at Geo. W. Carpenter's Chemical Warehouse, No. 301, Market street, Philadelphia.

FORMULA

FOR THE

SULPHATE OF RHUBARB.

Formula for the preparation of Sulphate of Rhubarb, with some remarks on Rhubarb and its preparation.

Boil for half an hour six pounds of coarsely powdered Chinese rhubarb in six gallons of water, acidulated with two and a half fluid ounces of sulphuric acid, strain the decoction, and submit the residue to a second ebullition in a like quantity of acidulated water, strain as before, and submit it again to a third ebullition; unite the three decoctions, and add, by small portions, recently powdered pure lime, constantly stirring it to facilitate its action on the acid decoction. When the decoction has become slightly alkaline, it deposits a red flocculent precipitate, and the fluid is changed from a yellow to a crimson colour, the precipitate is then to be separated by passing it through a linen cloth, and dried, after which reduce it to powder, and digest in three gallons of alcohol, at thirty-six degrees, in a water bath, for several hours, at a moderate heat; separate this solution from the calcareous precipitate, and distil off three-fourths of the alcohol, there then remains a strong solution of rhubarbine, to which add as much

sulphuric acid as will exactly neutralize it, evaporate this slowly to dryness without having access to atmospheric air, the residuum will be of a brownish-red colour, intermingled with brilliant specks, possessing a slightly pungent styptic taste, soluble in water, and its odour that of the native rhubarb.

This preparation is a concentrated form of that valuable cathartic, separated from the ligneous and mucous portions, and bears a similar relation to the crude substance that quinine does to the Peruvian bark.*

From the experiments which I have made upon several varieties of rhubarb, I found the Chinese to be the most active, and that variety which has been denominated in the market Russian, and which commands double the price of the Chinese, produced about one half of this principle, and consequently is much less active than the former. This rhubarb, in fact, appears to be nothing more nor less than the English variety, suitable pieces of which have been selected, bored, rasped, &c. in imitation of the Russian, but which wants in degree all the characteristic properties of weight, solidity, compact fracture, and particularly the essential quality of cathartic energy, which are all so strikingly exhibited in the Russian variety, and in corroboration of which Dr. Paris, in his excellent work the Pharmacologia,

* By subsequent experiments I have proved the sulphate of rhubarb to be much less active than the alcoholic extract on the next page, as will be seen by additional remarks on this preparation in a subsequent part of this work.

under the article rhubarb, states that inferior kinds of Russian, East India, and English rhubarb are artfully dressed up and sold under the name of Turkey, and I am well informed that a number of persons in this town, known by the name of *Russifiers*, gain a regular livelihood by the art of dressing this article, by boring, rasping, and colouring the inferior kinds, for which they charge at the rate of eighteen pence per pound. I had not an opportunity of making any experiment on the Turkey rhubarb, as I could not procure what accorded with the physical characters of the genuine article. The difference in the medical activity of these several varieties must essentially depend upon climate and cultivation, as it is asserted by Dr. Rehman, that they are the roots of the same species, Rheum Palmatum, (although the Dispensatories and Pharmacologia consider them distinct species,) and ascribe the Chinese to be the product of the *Rheum Undulatum*, and the Turkey of the *Rheum Palmatum;* and it is established beyond controversy that climate and cultivation are two of the most powerful agents in modifying the condition of vegetable matter.

On the preparation of Spiced Syrup of Rhubarb.—Paris in his Pharmacologia states, that water at two hundred and twelve degrees takes up twenty-four, and Thompson thirty parts in sixty, and by decoction its purgative qualities are destroyed, which decoction is extremely turbid and deposits a copious precipitate on cooling, and will be decomposed by standing a few days, whilst alcohol takes

up two and one-seventh from ten parts without the mucous portion, and is perfectly transparent, and will remain unaltered by keeping. Hence as water takes up a larger proportion of mucous and inactive matter, and as decoction destroys its purgative properties, I think a very important alteration might be made in the formula of the preparation of syrup of rhubarb of the shops, by substituting a concentrated spirituous tincture of the rhubarb, spices, &c. in place of the aqueous decoction of the same, and to add it near the conclusion of the formation of syrup of proper consistence. The alcohol in this mode cannot be made an objection, as it need not much exceed, if any, the proportion of spirit in the former method to prevent the fermentation of the aqueous decoction, and if these circumstances are correct it certainly will be a more active and eligible preparation, and well deserves the practical investigation of the faculty. This preparation does not enter the works of Paris or Thompson in any shape, but is given by Dr. Coxe in the late editions of his standard work, the American Dispensatory, in the manner now prepared, and is very extensively employed in this city, perhaps as much so as any other pharmaceutical compound, and if its activity could be increased it no doubt would be a very desirable object, it now requires a large dose to be effectual, and sometimes frequently to be repeated, insomuch that its use is almost exclusively confined to children, the dose for adults frequently exceeding two ounces, which is cer-

tainly objectional, and excludes its use in many cases where, if more active, it would no doubt be extensively employed to advantage.

Extract of Rhubarb.—This preparation, according to the method now pursued, is very feeble; the protracted heat necessary to evaporate the water, and the absorption of oxygen, acts so unfavourably during its formation, that its purgative properties, although not entirely destroyed, are so greatly impaired that its use has become almost abandoned by the profession. By the following process, however, a much more active preparation may be obtained, and where the use of the extract is approved, this will be found to possess the proper characters.

Take of coarsely powdered Chinese rhubarb, lbj. digest in six pints of alcohol for seven days, and filter; distil off the alcohol in a water bath to the consistence of thin honey, then evaporate to a proper consistence in a water bath saturated with muriate of soda.

By this process much less heat and time is required to evaporate the menstruum, and owing to the alcohol much less oxygen is absorbed, and an extract of much more activity is thus obtained. This mode is certainly more expensive; but if the product is more effectual as a medicine, this small difference should not constitute an objection, as much of the alcohol is saved by distillation, and in the preparation of all medicines, a preference should be given to that method which will render them

more active and effectual without regard to expense, unless it be exorbitant and the difference inconsiderable, for where health is implicated, interest should be suspended.

Professor Coxe has the above article introduced in the last edition of his valuable dispensatory.

REMARKS

ON THE

USE OF PIPERINE.

Remarks on the use of Piperine, with the formula for its manufacture, together with observations and experiments on the Piper Nigrum and its preparations.

Since the discovery of quinine and cinchonine by the celebrated chemists Pelletier and Caventou, vegetable chemistry, previously almost unknown as a science, has made rapid advancement; and the still further successful experiments and discoveries since made upon vegetable matter, have not only swelled the catalogue of highly important and useful materials, but have given an additional stimulus for the undertaking, and created an ardent zeal for investigation in those already engaged in researches, as well as opened a field of encouragement, in which numberless votaries have appeared. By these means this department of science, having emerged from a stage of neglect and obscurity, has risen with unparalleled rapidity, even within the space of a few years, to its present exalted position; and the numerous advantages and useful discoveries, resulting from

its rapidly improving condition, have caused it to rank as one of the most important branches of chemical science.

Every vegetable substance in the materia medica, which has yet been subjected to chemical analysis, has produced an elementary or alkaline principle, upon which the virtues and activity of the medicine entirely depend. An instance is found even in opium, which, acting in a double capacity, both as a stimulant and sedative, has afforded two principles, corresponding with the operations of the crude material: one is stimulating, the other sedative. When administered in combination, acting like the crude substance; when separate, individually exercising the sedative or stimulating effects, as one or the other may be employed. These isolated substances possess many and great advantages over the crude materials. The activity of those particular effects, which are desired from the administration of the medicine, being concentrated, and consequently greatly increased by the separation of the inert and injurious portions, obviates almost entirely the difficulty of exhibition, as well as facilitates a more speedy and certain action on the constitution.

It is well known that many substances, in their crude state, in consequence of bulk and insolubility, cannot be administered in many stages of debility in sufficient quantity to produce the desired effect. In such instances, the alkali is well adapted to form a substitute; for being separated from the more gross, ligneous, and inert portions, it requires a compa-

ratively small dose, and constitutes a valuable remedy in cases where the former would be rejected. Another, and no less important advantage in favour of the alkaline principles is, the uniform persistency of their strength. No one will for a moment question the many inconveniences and evils, resulting from the great uncertainty of effects and difference of activity, in most of the crude materials; and some of the most important are subject to these defects. Peruvian bark, for example, is composed of twenty-five species, and each one differing in strength. Bark, even of the same species, from a difference in adventitious circumstances,* to which it is always exposed, (although its external characters are sometimes scarcely affected, its quality is always injured) is scarcely ever found alike. I have met with bark in the preparation of quinine of the same species and of the same importation, differing twenty-five per cent. in the product of the active alkalies. The physician, therefore, would have been deceived in the strength and consequent effect of this bark, while the quinine is universally the same. For example, the quinine, produced by the inferior bark, although much less in quantity, was fully equal in quality. If the practitioner, therefore, may be so much deceived by the difference of strength of the same species, how much more would he be disappointed by those which produced but one-eighth or one-twelfth the quantity—and some yield even but a trace of the

* See Carpenter on Cinchona.

principles upon which their febrifuge properties exclusively depend.

The preceding observations in support of concentrated medicines, are made in consequence of there existing, even at this period of time, some few who disapprove of vegetable alkalies, and reject their use on all occasions, by giving preference to the crude material. If their conclusions were drawn from experiment they would most certainly be entitled to credit and respect; but where a determination is made against admitted facts, without advancing new grounds drawn from argument or reason, and where new discoveries are denounced without even a single experiment or authority of any kind, I am sorry to say that such a course can be attributed only to prejudice, and should accordingly be so appreciated.

There is another class of opposers, governed by envy; this is a worse species than the former; they are, however, of little importance as to *influence*. It has ever been a grievous circumstance, that, in almost every department of science, criticism is so easy a task, that the least informed and most unintelligent will make bold opposition against the most useful and important researches, and sometimes from no other cause than that they themselves were not the authors. Their efforts are, however, overbalanced by the happy consequence, that sentiment and expression do not, in the least, alter or modify the condition of matter; and follies of this nature, therefore, so far from effecting an injury or causing the least impediment to the march of science, merely

offer an exposition of error, either to be dispersed by truth, or corrected by the light of science.

The object of the present communication is, to describe a new principle recently discovered in black pepper, which has been denominated piperine, and which is proved from careful experiments, to be a successful remedy in intermittent fevers, and has been employed with advantage in typhus fever and periodical headache; and from the respectability of the authorities given in its support, bids fair to become an important addition to the materia medica. It may be given in doses of from one to four grains. It has been employed in doses of one grain every hour, in several cases of intermittent fever, with as much success as the quinine. It is found to be a valuable adjunct to that substance, equal parts acting with more energy and success than the whole quantity of quinine.

Black pepper, in its crude state, has long been known as a valuable medicine, and is stated to be an excellent adjunct to bark, in intermittents, and the author* observes that Mr. Brande must certainly be mistaken when he says, it acts only as a warm condiment, agreeable to the stomach.†

* Rennie's Supplement to the Pharmacopœias of London, Edinburgh, Dublin, and Paris.

† It may be observed, with deference to Mr. Brande's opinion, that there never has been a medicine yet discovered, respecting whose qualities, some diversity of opinion has not existed, and every medicine, however valuable, has met with some opposition.

It is mentioned in Dr. Coxe's valuable dispensatory, under the article piper, that Dr. Frank, physician to her Majesty, Maria Louisa, recommends the black pepper in different species of intermittent fevers.

This had previously been used in the east, with success, after every known means had been ineffectually tried. The dose is five to ten grains, twice a day; and Dr. Ghigini reports ten cases cured by it. Dr. Frank mentions seventy patients, who came under his notice between April and June, of whom fifty-two had tertian, ten quotidian, and eight the quartant fever. Fifty-four were completely cured within a week or so, without any subsequent relapse. He dips the seed of black pepper into a mucilage of gum arabic, and subsequently into powdered colombo, to disguise it, and gives from five to eight pills twice a day. None of his patients required more than from seventy to eighty pills for a complete cure. Dr. Frank recommends to the profession to try the extract of black pepper, in intermittent fevers. This preparation was tried on nine individuals, affected with intermittent fevers of different types, in doses of four, eight, ten, or twelve grains, dissolved in water in some cases, and given in the form of pills in others, by Dr. Clock, of Trent; and the effects surpassed his warmest expectations.

From these experiments it is concluded, that the extract of pepper is not only one of the best succedaneums for the bark, but that it is even preferable to it, on several accounts.

First. It never produces disturbance in the stomach or bowels.

Second. It never fails in producing a cure.

Third. Those who were cured did not in any one instance experience a relapse.

Fourth. It produces a regular alvine discharge, as well as the excretion of urine and sweat.

Fifth. None of those who were cured, experienced that sensation of langour, so common to a state of convalescence.

The following cases, treated with piperine, are given by Dr. J. Gordoni, physician to the hospitals of Livourne:*

Cleonice, of Paoli, entered the hospital in the month of March, 1824, to be treated of an incipient phthisis, in combination with amenorrhœa, a treatment lightly depleting for several months produced sensible advantages; and although the disease could not be called perfectly cured, a strong indication of a speedy recovery was apparent, for the *crachats* presented a better appearance, the cough was diminished, and the plethoric habit, accompanied with a kind of melancholy, had disappeared; when towards the end of September, of the same year, she was attacked with a violent intermittent fever, having the type of a double tertian. This disease was treated without success, by the skillful Dr. Guidotti, both by quinine in substance, and the sulphate of quinine in pills. On the 16th of October, having succeeded Dr. Guidotti in the hospitals, I found the

* Bulletin des Sciences Medicales, Avril, 1826.

patient much dejected and disgusted with the insufficiency of the means employed. Supposing the failure of the quinine depended upon some neglect in its administration, or that the pills were perhaps difficult of solution, I prescribed three doses of the same substance, in powder, to be taken daily. Two days after this treatment the fever stopped short, and the patient recovered a repose, which she had lost for a month. The remedy was continued for six days, which prevented a relapse, which had always been dissipated by the same remedy; but every time the use of it was suspended, the fever invariably returned. As there were not sufficient symptoms to consider it of an inflammatory nature, I determined, on the 2d of November, to substitute for the sulphate of quinine, eight grains of piperine, to be taken in three doses, as the sulphate, and with the same precautions. The fever ceased the first day, and never returned. The piperine was continued several days after, and I assured myself of the certainty of the cure, having attended the patient from her first disease until the end of December.

Second. A man aged thirty years, at Castiglione, on the sea shore, in the beginning of December, was seized with a tertian fever, which obliged him to enter the hospital of St. Antoine, of Livourne. Dr. Nicholas Orisini, being assured that the patient had never before been afflicted with a like fever, nor ever made use of the quinine, thought proper, as a good opportunity, to employ in this case the piperine, to assure himself of its efficacy. With this view,

he let the fever run out one of its intermissions, without employing any remedy, in order to be better acquainted with the nature of the disease. He then ordered a scruple of piperine, divided into six pills, to be taken in three doses, the last of these doses to be given two hours before the fever, and the two others at intervals of two hours preceding. After the administration of this remedy the paroxysm did not appear, the patient, who believed himself cured, wished to leave the hospital, notwithstanding the remonstrances of the physician, who assured him he could not calculate yet upon an entire cure. The patient soon repented not having taken counsel, for on his way to the shore, he had a fresh attack of the fever, and was obliged to return to the hospital. He again made use of the piperine, and having continued it for several days, he went out perfectly cured.

Third. Joseph Torsi, aged twenty-six years, entered the hospital of St. Antoine, the evening of the sixth of September, 1824; had been attacked six days before, with a true quotidian fever, and it was the first he had ever experienced. On the morning of the 17th, sixteen grains of piperine were ordered to be divided into eight pills, of which, four should be taken every two hours before the fit; but before the last dose was taken, the fever returned in spite of these means. The piperine was then carried to eighteen grains, to be taken in the same manner—when the fever disappeared; and the use of the remedy being continued for several days, preserved the patient entirely from all symptoms of recidiva-

tion. Dr. Orisini, who directed the treatment, was fully convinced of the perfect recovery and cure of the patient, who, having entered the hospital three months after, to be treated for peripneumonia, assured him that he had no accession of fever since he left the hospital.

From these observations, and many others, Mr. Gordoni draws the following conclusions:—

1. That the piperine will cure intermittent fevers, in the dose of eight or even six grains.

2. That it will cure fevers which have resisted the sulphate of quinine.

Finally: That it will prevent a relapse of fever better than that substance.

M. Meli* has also successfully employed the piperine, and considers it more certain, as a remedy in intermittents, than the sulphate of quinine.

For the following interesting communication on the use of piperine, I am indebted to Dr. J. S. Rose, of Philadelphia, who was the first to employ it in this city.

I have employed the piperine, prepared by Mr. Carpenter, in twenty cases of intermittent fevers, and am decidedly of the opinion that it will be found by all who may be disposed to try its virtues, a more certain and efficient remedy than any preparation of bark heretofore used.

I have also used it in two cases of low nervous fever or typhus. I was induced to employ it in these cases by observing, that in intermittents it did

*Ainslie's Materia Indica, vol. 2 page, 622

not prevent (in the first intermissions) all the stages of paroxysm; at the time the patient expected his chill he found a gentle diaphoresis, which continued to increase for two, three, and in some cases, for four hours; on the next day, however, (of the expected return) there was nothing like diaphoresis or fever; the patient passed this period without the least inconvenience, and remained exempt from a relapse, which is not always the case after the use of quinine. These facts led me to believe, that in typhus, when we wish a stimulating diaphoretic, nothing is better adapted, not even volatile alkali, which I have proved satisfactory to myself. In this form of febrile action, when the animal powers are about to yield to the influence of disease, and the patient falls a victim to the timidity of the practitioner, I have boldly withheld all other remedies, and administered the piperine in doses of two grains every two hours, until eight grains had been taken; in one of these cases, the low, muttering delerium now began to subside, the skin became moist, and the patient, sensible of his improvement, pronounced himself better. On the following day, the same doses were administered and repeated, for three, four, or five days, when I found no fever; the strength increased, and the patient, with an inclination for food, was certainly convalescent. These two were the only cases of typhus I have treated since I became acquainted with this valuable remedy. But these alone would incline me to say, with one of our professors, "as well might we deny the power of bark

in intermittents, or mercury in syphilis," as piperine in the cases alluded to. Yet I am not prepared to adopt his language fully and call it a *Panacea*.

J. S. R.

I subjoin the following important results from the use of piperine, By Dr. J. C. Rousseau, of Philadelphia, whose experience with the articles of our materia medica, entitles his observations to the highest confidence and estimation.

Dear Sir,

In compliance with your request to state my opinion upon the efficacy of the piperine in the cure of intermittent fever, I can testify, that although I have been able to administer this new article of the materia medica in few cases, it is satisfactory to inform you, that it has been successful in every one. The paroxysms left the patients on the first, and never later than the second day.

Some few remarks may with propriety be added to this succinct account, which may become instructive, and inculcate the necessity of caution in prescribing it in too large doses; the following case will illustrate this position:

A young girl, about twelve years of age, having had a return of intermitting fever, that had been stopped by the sulphate of quinine, was directed to take one grain of the piperine, made into a pill, with conserve of roses. She was a short time after seized with a vomiting, which was repeated to the number of seven times in the space of two hours. It

then began to promote alvine evacuations to the extent of twelve or fifteen times. The fever did not return, and she was directed to continue one grain of the medicine night and morning. It invariably produced alvine discharges in an unusual quantity.

In another case, a subject of about forty: it produced a radical cure in the dose of three grains, taken every twenty-four hours, and continued for some days after; and it is so much the more remarkable, as this patient had taken the sulphate of quinine for some days, in the quantity of thirty grains in every twenty-four hours, as he informed me, remarking at the same time, that during the use of it, he was under a most violent and painful state of excitement.

I can state with confidence, that this preparation of the black pepper, may be as useful and beneficial as the like preparation of the Peruvian bark, and I entertain no doubt of the probability of obtaining similar products, from all the other peppers, having been for many years, in the habit of administering the black and red peppers, with decided success, in the cure of intermittent fevers. Yours, &c.

J. C. Rousseau, M. D.

Geo. W. C.

I have just received the following valuable illustration of the effect of piperine, from my friend Dr. J. R. Black, of Philadelphia, which is an additional strong testimony of the success of this medicine, in the cure of intermittent fevers.

Mr. S. aged about forty years, during the first part of last month, applied to me, with a severe quotidian

fever, attended with rejections from the stomach, and with violent pain, and great determination of blood to the head, during the hot stage, with cold feet and slight delirium.

The case was treated with the lancet, emetics and purges, which on the third day changed its type to the tertian. On the day of intermission, sul. quinine was administered, which was often rejected, while it always increased the patient's nauseau, and head ache. Piperine was substituted in doses of one grain every hour, to the number of ten a day. The paroxysms immediately ceased, and the patient was in a few days discharged, radically cured. J. R. B.

Numerous other cases might be quoted in which this medicine has been employed, with the like happy results; but I think sufficient has been advanced, to satisfy the most sceptical, of its active properties.

Alcohol and sulphuric æther are the best menstrua, for the active properties of the pepper, which very soon impart its acrimony to these fluids. Mr. Brande gives alcohol and water; I am surprised that Mr. Brande should have omitted æther, since it is the most powerful solvent, and particularly that he should quote water, since it requires five hundred and fifty pints to extract the sapidity of one lb. of pepper. Water appears to be the best solvent for the colouring matter, for after pepper has been exhausted of its acrimony, by æther and alcohol, water will make a dark solution, which on evaporation, produces an extract exhibiting little of the pungency of pepper.

The piperine, employed in the above cases, I prepared according to the following formula.

Digest one pound of coarsely powdered black pepper, in one gallon of alcohol, for ten days, distil off one half of the alcohol in a water bath, add by degrees, diluted muriatic acid, to hold in solution the piperine, then add water sufficient to precipitate the resin, and separate the oil; a muriate of piperine remains in solution, concentrate this solution by evaporation, and add pure potass to decompose it, and neutralise the acid, when the piperine, in consequence of the diluted state of the alcohol, and the absence of the muriatic acid, will be deposited in yellowish transparent crystals. The crystals may be obtained perfectly colourless, by observing great care in separating the oil and resin, but as there is no disadvantage in the colour, the additional trouble and expense would not be compensated. The piperine, in a colourless state, is insipid and inodorous; but united with as much resin as enters into its crystallization, its taste is extremely powerful, possessing in an intense degree, all the heat and acrimony of the pepper, with considerable of its odour, and I think is a more active preparation than the former, it was in this form exhibited in the treatment of the cases above described. I have obtained larger crystals, by employing sulphuric æther as a menstruum, instead of alcohol.

The crystals of piperine are transparent, of a straw colour, and assume the tetrahedral prismatic form, with oblique summits; I have obtained them

larger than the ordinary crystals of sulphat of magnesia.

Extract of Black Pepper.

Digest eight ounces of black pepper coarsely ground, in four pints of diluted alcohol, for four days, occasionally submitting it to a temperature near ebullition in a water bath, filter and evaporate to the consistence of an extract. This is found also to be an active remedy in intermittent, in doses of two or three grains. In a soft state it has proved very convenient to give consistency to piperine or quinine for the formation of pills, while at the same time it increases their activity, particularly the latter; it is certainly preferable to the conserve of roses, or gum arabic, which enlarge the pill without increasing the effect.

The extract of pepper in every formula I have seen, is directed to be prepared with water. This forms a much less active preparation and possesses several inconveniences, to which the above is not subject.

I have employed the white and black peppers in the above preparations, and although it is stated that the white pepper is milder than the black, I have found it to yield more piperine and an extract of much more acrimony and activity, and to contain much less colouring matter.

The constituent principles of pepper, are piperine, oil, resin, extract, colouring and fecular matters.

Subsequent experiments have proved the oil of

black pepper to possess all the valuable proper. 99
piperine in a superior degree, one drop being equal in energy to three grains of the latter. I have combined quinine, piperine, oil of black pepper, cornine, gentianine, and several other tonic vegetable principles, in the form of a mass, which I have denominated compound tonic extract, and which has proved much more efficient in intermittents than any of the articles used singly, even in double doses. This article is now much used in the southern states, and has given the highest degree of satisfaction.

EXPERIMENTS

ON

MERCURY

AND

BLUE MASS.

On the Division or Extinction of Mercury by Trituration: with Observations and Experiments on the Blue Mass and other preparations of Mercury.

Mercury has been considered by some writers to produce no action on the body, when taken internally in the metallic state; this has been doubted with sufficient reason by Orfila in his Toxicology.

Blue mass, Pil. Hydrargyri, or Blue Pill, as it is commonly termed, has heretofore been always esteemed, one of the most valuable preparations of mercury, being mild and at the same time more certain and efficacious in many diseases, than any other preparation of that valuable mineral; hence it has been, and continues to be, very extensively employed in most cases where mercurial action on the constitution is required, and when properly made, and in like manner administered, has invariably supported its wonted and established reputation.

In the preparation of it, the most viscid and tenacious substances are employed, as conserves, honey,

manna, &c. for the more speedy *extinction* of the mercury as it is generally termed, or more properly its minute division, after which some vegetable powder (of which starch is most proper,) is added, to give the mass a proper consistence for the formation of pills. It has generally been supposed that the mercury by this process was converted into the state of a protoxyde, but late careful experiments, prosecuted exclusively for the purpose of ascertaining the condition of the mercury, have satisfactorily proved the contrary.

From the remarks and experiments of Mr. Joseph Roux, (Pharmacien á Nimes,) addressed to Mr. Planche, in the Journal de Pharmacie, tome XI. page 215, it will appear that, (although from the various discussions of chemists, on the method of reducing mercury, a conclusion has generally been drawn in favour of those substances which contain the most oxygen,) turpentine and liquid styrax will as speedily and effectually extinguish or reduce the mercury as the oxygenous fat, and that the various conserves, syrups, extracts, oils, meals, fecula, and vegetable powders all produce the same results in that speedy and effectual reduction of the mercury in proportion to the tenacity of the substance employed; for example, the extracts succeed better than the conserves, the conserves better than the syrups, the syrups than the oils, &c. These different experiments led to the conclusion that oxygen was not essential for the extinction of mercury, and to prove which, it was acted upon by substances destitute of this ele-

ment; bitumens were accordingly selected such as petroleum, and maltha.* Having reduced the petroleum to a more than syrup consistence, the result was perfectly satisfactory, and Mr. Roux observes, I was then authorised to think my conjecture was correct, but in order to assure myself positively of the fact, I acted upon it free from the contact of atmospheric air. I accordingly placed a vessel containing the mercury and maltha, (reduced to a consistence that allowed the pestle to work,) in the receiver of an air pump, and after having made a vacuum I put in motion, by the means of a handle, a pestle surrounded by a brass stem, a little bent at the lower part, which passed through the bell and the copper framing, by which it was surmounted. This experiment succeeded as well as any of the others and established beyond a doubt the fact that mercury may be extinguished without the aid of oxygen.

Mr. Planche observes, (Journal de Pharmacie,) that from the ingenious experiments of Mr. Roux on the division of mercury in vacuo, by means of a substance containing no oxygen, it has been proved, that the mercury in the ointment and other preparations exists in the state of minute division, and not in that of an oxyde, which is no longer a subject of doubt to a great many.

This may readily be proved by melting the ointment in hot water, or by washing the blue mass in cold water, decanting the saccharine and feculent

* Pitch and wax melted together.

matter, and placing the remainder, (carefully washed from the vessel with a little water,) on a filter of paper, and left to stand until perfectly dry, when nearly all the mercury used in its formation may be collected; a small portion necessarily will be lost in its preparation, together with more minute globules which cannot be collected. I treated in this manner ʒj. of the blue mass manufactured at Apothecaries' Hall, London, in which the mercury was more effectually reduced than any I had ever seen, and obtained from it sixteen grains of metallic mercury, within four grains of the quantity originally employed in making the mass; small globules were also visible in the residuum which I could not collect; on examining several drops of the liquor I decanted, which had accidentally fallen on some white paper and dried, it had a shining metallic appearance, and evidently contained metallic mercury, which was proved after two days standing, by the aggregation of globules. Mr. Thomas Evans, an intelligent druggist of this city, in a paper published in the Journal of the Philadelphia College of Pharmacy, states that from one hundred grains of blue pill, which had been triturated for many days, twenty grains of running mercury were *easily* collected and *numerous* globules were still visible in the residuum.

An effect takes place in making the pommade mercurielle, a preparation employed extensively in France, which goes strongly to prove that the mercury in this preparation is not in the state of an oxyde, as well as all the others; for it is admitted

by all without the least doubt, that in all cases where mercury is reduced by simple trituration, it exists in the same condition. In making this preparation, if it happens that the butter of cocoa, (*beurre de cacao*,) which enters its composition, be too suddenly cooled, the mercury, which previously had every appearance of perfect extinction immediately appears in large globules; to reduce them it is only necessary to gently heat the pestle and stir the pommade a few minutes, when the mercury is again reduced. I will ask if any man acquainted with the laws of chemistry, can for a moment suppose that the mercury in this preparation is in any other than the metallic state, or attribute so sudden a reduction of the mercury, to the absorption of oxygen, when eight days trituration would not be sufficient to effect it by the ancient process?

Besides these, there are other preparations of mercury where it has been triturated with pulverulent substances, as chalk, magnesia, sugar, &c. in all which cases, the mercury exists in the same condition as in the ointment, mass and pommade, that is in a state of minute metallic division, and not of an oxyde. From a portion of hydrargyrum cum creta, imported by Charles Marshall from the Apothecaries Hall, London, in which the mercury was apparently oxydized, inasmuch that not a globule was visible, (when most favourably exposed on paper,) even with the assistance of a good microscope, I put a small quantity in vial and agitated it a short time in cold water; when subsided, I decanted the water and

after several washings and decantations in the same manner, the sub-carbonate of lime was separated, and there remained a greyish powder, which I placed on a filter of paper, which by simple imbibition of the paper, without pressure or trituration, the mercury assumed the form of globules, in weight nearly equal to the quantity originally employed in the composition.

Mercury reduced by trituration with sugar may most readily be tested by dissolving the sugar, which will leave the mercury in its metallic state. From the suggestions of Mr. Phillips, of London, I treated a portion of the hydrargyrum cum creta with acetic acid, having placed a small quantity of the powder in a vial and washed it in successive portions of the acid until the sub-carbonate of lime was dissolved; then I threw the whole on a filtre of paper, which when dry exposed the mercury entire.

As the above experiments are in the reach of any one desirous of proving the fact, I hope advantage will be taken of them and little doubt will hereafter exist as to the state in which the mercury exists in these several preparations. Although differing from the opinion of many authors of established reputation, I feel confident in stating the fact, inasmuch as I believe, (from their own expressions,) their conclusions were drawn from external characters without experiment; as in most instances where these preparations are spoken of, it is remarked that the mercury is in the state of minute division, and probably converted into the black oxyde; the word probably im-

plies a direct incertitude, and speculation as to the real state in which the mercury exists in these preparations, and indicates that they have never been examined with a view to discover its condition, otherwise their descriptions must have been more definite.

Mr. Rennie in his late valuable supplement to the pharmacopœias, observes, that chemically, the blue pill is described in two ways. One party of chemists say that the mercury is unchanged and exists in a state of extreme division, whilst another party assert unconditionally, that mercury is converted into a black oxyde, which is a protoxyde. Mr. Phillips, on the other hand, more justly observes, that experiments are still wanting to explain the subject, but that it *probably* contains a sub-oxyde, as he supposes to be the case with the hydrag. cum creta.

It may be remarked by some, if the mercury exist in its metallic state, why resort to the tedious method of its division? It may be readily answered, that independent of increased action by its minute division, mercury, from its fluidity and volubility, could not be administered in its metallic state, in the various doses, forms and compounds, in which the blue mass has been so conveniently and successfully exhibited. It has also been proved by experience, that the mass which contains the mercury in the most minute division is preferable on account of a more speedy action, as well as being less liable to lose the mercury by exudation. Hence it is that the blue mass and other preparations of the mercury

manufactured at Apothecaries' Hall, London,* and at the laboratory of Mander & Co. of Wolverhampton, have justly been preferred as more eligible preparations, at which places they possess considerable advantages of improved machinery by steam power for the more speedy and effectual reduction of the mercury. It has been suggested and recommended to use the black oxyde of mercury as a substitute for the blue pill. However valuable a medicine the black oxyde may be, it cannot be substituted for the blue pill, on the ground of being the active principle of that substance; although I do not doubt that a few grains out of a hundred may be in the state of a sub-oxyde, but most certainly not in sufficient quantity to have the sole agency in the effect of the blue pill, but on the contrary, from its minute proportion, to have little or none. The black oxyde of mercury, however, is no doubt a most valuable medicine, and from the careful and correct experiments of Dr. Benjamin H. Coates, of this city, its efficacy has been fully established.

As the blue mass holds an important place in the materia medica, and is perhaps more extensively employed than any other compound, it will no doubt be desirable to have a formula which will most readily reduce the mercury. After a number of ex-

* The mass is prepared at Apothecaries' Hall, London, by a machine consisting of an iron mortar and four wooden pestles driven by a steam engine. This both triturates and rolls the mass, and the pills are said to be stronger than those made by the hand.—Rennie's Supplement, &c.

periments, with a view to discover what combination and proportion of substances most speedily and effectually reduce the mercury, and at the same time preserved the mass longest of a pilular consistence, I have adopted the following formula and process as possessing the greatest advantages. This forms a mass more like that manufactured at the Apothecaries' Hall, London, than by any other process which I have seen. The globules of mercury are effectually reduced in a short time, and are perfectly invisible; when rubbed on white paper and inspected with a microscope. The mass is of a fine blue colour, and will preserve a pliable consistence a long time.

R. Hydrarg. Pur	- - -	℥iss.
Manna Pinguis	- - -	ʒiss.
Mel. desp.	- - -	ʒss.
Amyli	- - - -	ʒi.
		M. S. A.

As the mercury of commerce is frequently adulterated with lead, bismuth, tin and zinc, it is important to have it distilled previous to employing it in the above preparation.

The manna and honey in the blue pill are better than any other substance yet employed, and reduce the mercury more speedily and effectually than the conserve of roses, over which they have other advantages. The conserve of roses is objectional also from occasionally containing sulphuric acid which has been added to increase its colour; hence a poi-

sonous sub-sulphate of mercury may be formed during the trituration. Dr. Coxe justly remarks in the fifth edition of his Dispensatory, (although conserve of roses is in the formula he has selected) that experiments fairly made, would sanction the manna as preferable to any other substance for the speedy and effectual extinction of the quicksilver; and whatever may be thought of the conserve of roses, it appears probable that its use is only dependent on the sugar in its composition.

In making this preparation the whole amount of mercury should be triturated with a small part of the manna and honey, until reduced, (which will be more speedy than if worked with all the ingredients;) the remaining portion of manna and honey is then to be added, and the whole beat up till well incorporated; to which then add the starch to give it a proper consistence. This mass, when finished, has a fine blue colour, no globules visible when exposed on paper, even with the assistance of an ordinary microscope; it is of proper consistence for the formation of pills, and will retain its moisture for a long time; a quantity made according to the above formula has been kept for upwards of a year, when its consistence was nearly as good as at the time of its formation, and no globules discoverable when carefully examined. It is a desirable thing that the mass should remain soft which the above formula will particularly effect. I have seen blue mass become perfectly hard, sufficiently so to powder, in consequence no doubt of having gum Arabic in its composition. Li-

quorice root and rhubarb enter into some receipts for the preparation of the blue pill, but the mass which contains them may be known by its dirty grey colour, and frequently becoming mouldy after a short time.

As a great quantity of blue mass is badly made, and I believe more from not having a proper formula than from any want of art or attention in its reduction, I am induced to offer the above, under a full assurance, from careful experiment, of its superiority to the common formula with conserve of roses; and should it prove useful in the hands of those who may think proper to adopt it, the author will have obtained the object of this publication.

ON IODINE,

AND ITS PREPARATIONS.

This is one of the most valuable and important of the medicines recently introduced. It is soluble in æther and in alcohol; the latter dissolving it proportionable to its degree of rectification. Water does not dissolve more than $\frac{1}{7000}$ of its weight.

It is extracted from the mother waters of soda, prepared from sea weed, where it exists in the state of hydriodate of Potass. These waters are obtained by burning the fuci that are found on the coast of Normandy, draining the water through the ashes and concentrating the liquor.

To obtain the iodine, an excess of concentrated acid is added to these waters, and the liquor is gradually brought to ebullition in a glass retort, furnished with a receiver. The acid seizes on the basis of the hydriodate, and on the hydrogen of the hydriodic acid, so that the result is sulphate of potass, water, sulphurous acid and *iodine*, which rises in violet coloured vapours, passes into the receiver with a small quantity of acid, and in that state is condensed. In order to purify it, it must be washed, mixed with water containing a little potass, and again distilled.

Dr. Coindit of Geneva was the first to use the iodine as a medicine, which he employed with remarkable success in the treatment of goitre; it has since been used both in Switzerland and France, by several physicians, who speak very highly of its effects as a medicine in goitre, in scrofulous ulcers, &c. and quote a number of cases of the successful treatment of these diseases, by the use of iodine. The iodine is now used in this country to a considerable extent; it is generally employed in the form of tincture and ointment, formulas for the preparation of which will be given hereafter. Dr. Gardiner has published in England a very interesting memoir on the effects of iodine, on the animal economy, and on its advantages in the treatment of goitre and scrofulous, and tuberculous affections of the thorax and abdomen.

Dr. Barron appears to have employed the remedy with some success in the treatment of scrofulous, phthisis, and certain other tuberculous affections.

TINCTURE OF IODINE.

Take of alcohol 36°	1 ounce.
Iodine	48 grains.

The iodine should be triturated fine with the alcohol in a mortar, and occasionally rubbed down in it, after standing 24 hours, it is fit for use, and should be filtered before using, as there is generally a portion of the iodine undissolved.

It is given to adults in the dose of from 4 to 10 drops, three times a day in a glass of sweetened water; the quantity may be gradually increased to

20 drops, (which contains about one grain of iodine) three times a day.

Solution of Hydriodate of Potass.

Take of Hydriodate of Potass	36 grains.
Distilled water	1 ounce.

This solution is still capable of dissolving iodine, and of thus forming an ioduretted hydriodate of potass. If we wish to procure the solution called coindet's, 10 grains of pure iodine must be added to the solution of the hydriodate of potass described above.

These preparations, whose mode of exhibition is the same as that of the tincture of iodine, are employed as well as it in the treatment of goitre and scrofula, in the latter case some tonic is generally combined with it.

M. Magendie has for some time made use of the solution of hydriodate of potass both in hospital and private practice; he is confident the dose of this solution may be increased to three *gros* per diem, without any unpleasant consequences; debilitated and very nervous women have taken this quantity for many weeks, without the least appearance of derangement in any function. In this dose two cases of cancer of the tongue recovered in the space of a fortnight, in the incurable wards of *L'Hospice de la Salpetriere*. The women were affected with this disgusting and horrible disease for many years, and admitted into the hospital as incurables, one still remains there, having been three months under treat-

ment and is going on very well. In the same place, a woman who had for a long time suffered under ulcerations of the tongue, has just received a complete cure from the use of the hydriodate of potass.

Ointment of the Hydriodate of Potass.

Take of Hydriodate of Potass	½ drachm.
Axunge	1½ ounce.

Mix.—This may be used to the extent of half a drachm night and morning in the way of friction upon a goitre or glands, enlarged with scrofula; at the end of a week, the quantity may be increased to a drachm or more, according to the age of the patient and extent of the tumour. Sometimes by these means a complete resolution of tremours is effected, which could not be removed entirely by saline solutions. This ointment has been successfully used in various cases of enlargement of the testicles, which had resisted other means. Sometimes, however, mere friction will not do, and recourse must be had to both modes of exhibition, but, in general, more advantage seems to be derived in scrofulous affections from the saline solutions. The activity of this ointment may be increased by adding from 10 to 15 grains of pure iodine to form what is called ointment of iodureted Hydriodate of Potass.

Ointment of Iodine.

Take of Iodine - - -	1 drachm.
Axunge, - -	1 ounce.

Powder the iodine and triturate it with the lard in a glass mortar. This ointment is used in the same manner as that of the hydriodate, in about the same quantity; it is, however, not as much used as the hydriodate ointment, which latter is in every way preferable.

Iodurets of Mercury.

The *Proto-Ioduret of Mercury* is prepared by uniting solution of hydrate of potass and protonitrate of mercury, which precipitates the proto-ioduret It is of a yellow colour and insoluble in water, according to Dr. Thompson, 162 parts contain 62 of iodine and 100 of mercury, or 25 of mercury and 156 of iodine.

The deuto-ioduret is prepared by dissolving separately 70 parts of corrosive sublimate, (deuto-chloruret of mercury) and 100 parts of the hydriodate of potass, and uniting the solution when the deuto-ioduret of mercury will be precipitated, it is very soluble in the hydriodate of potass and in mercurial salts, so that care must be taken not to apply an excess of either of them. This preparation contains 250 parts of mercury and 312 of iodine. Hydriodic acid may be substituted for the hydriodate of potass in the preparation of these iodurets.

These preparations are employed in the form of ointment, tincture, solution and pills, and have proved a valuable remedy in chronic syphilis and venereal ulcers.

Ointment of Proto-ioduret of Mercury.

Take of proto-ioduret of mercury,		20 grains.
Axunge	- -	1½ ounce.

This ointment has been highly recommended in the treatment of inveterate venereal ulcers, in which it is said to accelerate the cicatrization.

Ointment of the deuto-ioduret of Mercury.

Take of deuto-ioduret of mercury,		20 grains.
Axunge,	- -	1½ ounce.

This preparation is more active than the preceding, and is therefore to be used in smaller quantities.

Tincture of Deuto-ioduret of Mercury.

Take of deuto-ioduret of mercury,		20 grains.
Mix. Alcohol at 36°,	-	1½ ounce.

Twenty-six drops of this tincture are nearly equivalent to one-eighth of a grain of the deuto-ioduret itself, it may be given to the extent of 10, 15 or 20 drops in a glass of distilled water. We are assured that it has succeeded in scrofulous complaints complicated with syphilis.

Sulphuric Æther with Deuto-Ioduret of Mercury.

Take of sulphuric æther	1½ ounce.
Mix. Proto or deuto-ioduret of mercury	20 grains.

This being a more active dose than the preceding, must be administered in smaller doses.

Pills of the Deuto-Ioduret of Mercury.

Take of Deuto-Ioduret of Mercury	1 grain.
Extract of Juniper	12 grains.
Liquorice Powder	q. s.

Mix and make into 8 pills, two to be taken at first morning and evening, augmenting the dose subsequently to four at the same periods.

Pills of the Proto-Ioduret of Mercury.

May be made in the same manner, and taken in the same dose.

The combination of mercury and iodine must certainly be a medicine of considerable activity, and from the effects of each of them on the system in glandula affections, we might anticipate the most favourable results from the compound in scrofulous and venereal diseases.

Alcoholic Extract of Nux Vomica.

The nux vomica is one of the most active articles of the materia medica, and has lately been successfully employed in the treatment of paralysis. M. Fouquier who has had much experience with its use and action, gives it in the form of pills, consisting of two grains each. The dose is two pills daily for the commencement, and gradually increased to 10 or 12, a number rarely exceeded.

The constant effect of this substance is to produce first in the paralyzed parts, and afterwards in the

rest of the body, a succession of shocks or contractions, similar to those occasioned by galvanism.

Magendie recommends the pills to be made of one grain each, and to commence with one or two daily, increasing the dose until the desired effect is produced. This is the dose I have generally seen prescribed by the physicians of this city. A tincture may also be employed according to the following formula.

Tincture of Nux Vomica.

Take of Alcohol at 36°	1 ounce.
Dry extract of Nux Vomica	3 grains.

Dissolve.

Of this a few drops may be given in any simple vehicle. In this form it may also be used by friction upon the parts affected, it is a mode much employed in Italy, and from which M. Magendie has seen great effects result in his own practice.

Strychnine.

It would appear to be almost useless labour expended to obtain a more concentrated preparation than the nux vomica, or the extract. The crude substance, however, like all other articles of the materia medica, is subject to vary in quality and strength, and to be affected by various circumstances, to which it may be exposed, thus making the strength of the crude material vary; and consequently the extract differing in proportion to the

acting of the Nux Vomica, and also in the variable modes of its preparation.

Strychnine as we generally see it is of a greyish white, granular or in powder, this is owing to its too rapid crystallization, if carefully prepared it is in the form of minute crystals, which by the aid of the miciscope are found to consist of four sided prisms terminated by pyramids with four depressed faces. The sign of its purity is not reddening with nitric acid, a degree almost unattainable in strychnine procured from nux vomica. That obtained from St. Ignatius' bean is purer, but the purest and most easily obtained is furnished by the Upas, it is also obtained from the snake root.* The brucine exists with the strychine in all the above articles, but in less proportion in the St. Ignatius: and M. Majendie observes it is unfortunate that the bean of St. Ignatius is so rare an article in commerce, as the strychnine contained in it is nearly free from brucine and could be readily obtained from it in a state of purity.

Its action on the system is the same as that of the extract of nux vomica, and is applicable in the same cases though much more powerful and requiring a less dose, and it might be entirely unnecessary to have recourse to strychnine, if the extract of the nux vomica were always prepared in the same manner, and exempt from those variations in their effects arising from the different modes in which they are prepared, in consequence of the greater uniformity of the

* Lignum or Strychnos Colubrinum.

strychnine in this respect, it is in general preferred. In Germany and Italy accounts have been published of its successful employment. It is generally employed in the form of pills which are made from the following formula:

Pills of Strychnine.

Take of Pure strychnine	2 grains.
Conserve of roses	½ drachm.

Mix accurately and divide into 24 pills.

Tincture of Strychnine.

Take of Alcohol at 36 deg.	1 ounce.
Strychnine.	3 grains.
Mix.	

Dose from 6 to 24 drops in draughts or common drink.

The pills were they can be taken are preferable to the solution, in consequence of the extreme bitterness and unpleasant taste, for although nearly insoluble in water 6,667 times its weight, at a temperature of 10 deg. its bitterness will be distinctly perceptible. If a solution of strychnine made in cold water, and consequently not containing above $\frac{1}{6000}$ part of its volume, be even still diluted in a hundred times the quantity of the same fluid.*

The strychine is certainly a valuable remedy in paralysis, if we regard the writings of some of the

*Majendie's Formulary.

most distinguished physicians. Dr. Ratier states he had occasion to see it administered to a young man affected with paralysis in pills, containing each a quarter of a grain. In the dose of a grain and a half, it occasioned, but in a more considerable degree, the phenomena proper to the nux vomica; viz. a general titanic rigidity, with twitchings, which supervened every two or three minutes. These effects, which had at first alarmed the patient and assistants, terminated gradually in about three or four hours, and without any troublesome consequences.

Strychnine readily unites with acids, and forms salts, which are crystallized and are soluble; this must be remembered when giving strychnine in common drink, for lemonade and all acids very much increase its activity. The following are some of the salts of strychnine, sub-carbonate, sulphate, hydrochlorate, phosphate, nitrate, iodate and hydriodate, it also forms salts with the acetic, oxalic, tartaric and hydrocyanic acids, all of which are readily obtained, and form crystallizable salts.

The salts of strychnine in consequence of their greater solubility are more active, and consequently more intensely poisonous than their base, when the patient is habituated to the action of strychnine, it may sometimes be advantageous to substitute the salts for the strychnine itself without increasing the dose. M. Magendie has used none of the salts except the sulphate which has produced most decided relief in a case of paraplegia, given in a dose of a twelfth of a grain.

Brucine.

This exists as before stated in nux vomica, and several of the articles containing strychnine, it is analagous to strychnine but less intense, being in the proportion to that of pure strychnine as one to twelve, or according to M. Andral, jr. six grains of brucine are equal to one of impure, and a quarter of a grain of pure strychnine; it is generally given in the form of pills or tincture, increasing the dose gradually. In medical use, that which is obtained from the bark of the brucea antidysinterica should be preferred,* as that furnished by the nux vomica is rather apt to be mixed with a portion of strychnine, which increases its power and deranges our calculation as to the effects. As it possesses the properties of strychnine in a milder degree, it may be given to the extent of one, two, or even three grains, without apprehension as to the consequences in the same cases as the preparations of nux vomica are found to benefit. It is probable that much larger doses may be given, but

* Brucine is obtained by subjecting the inner bark of the brucea antidysiterica to a similar process to that directed for the preparation of strychnia, with this difference, that the magnesian precipitate must not be so elaborately washed.—Brucine being much more soluble in water than strychnine, on account of the greater quantity of colouring matter which it contains. By evaporating the alcoholic liquors, the brucine is readily obtained in a resinous form, not being yet sufficiently pure to crystalize. In its purification it must be combined with oxalic acid which is to be again decomposed by magnesia, and the brucine separated by a cohol, which being slowly evaporated in the open air, brucine will be obtained in a crystallized form.

we must be attentively upon our guard. M. Andral has given it in cases of palsy with advantage, from half a grain to five grains. M. Magendie has used it successfully in two cases of atrophy, one of the arm and the other of the leg. The patient took six pills daily of one-eighth of a grain. As it is subject to variation or strength from the frequent admixture of strychnine in it, the latter should be preferred as being a more active and uniform medicine.

Pills of Brucine and the Tincture may be made in the same manner as those of the strychnine. Brucine forms salts in the same manner as the strychnine, and being more soluble than brucine itself, is more active, and possesses some advantages.

Morphia.

This is the anodyne or sedative principle of opium. M. Robiquet prepares it by precipitating a strong infusion of opium by means of caustic ammonia, filters and evaporates the liquid down to a sixth part of its bulk, to this he again adds ammonia and obtains a fresh precipitate of pure morphia which he receives on a filter and washes it with cold water, when well dried he sprinkles it with a little alcohol, and passes the spirituous liquors through a filter, which carries with it a large portion of the colouring matter and also a small quantity of morphine. He then disolves the morphine in acetic acid, and treats the solution with ivory black. This mixture being agitated frequently, during twenty-four hours, is

finally projected on the filter, and passes through in the receiving vessels entirely colourless. He next applies ammonia, and the morphia is precipitated in the form of a white powder, if this be again dissolved in alcohol, and allowed to evaporate spontaneously, the morphine will be found in fine regular, white crystals, four sided rectangular prisms. Dr. Staples, an ingenious chemist of this city, has obtained the morphia by a more simple process, his formula is published in the North America Medical and Surgical Journal of this city.

Morphia unites with most of the acids, forming various salts of these preparations, the acetate and sulphate have hitherto obtained the preference. Their proportion in respect to the opium is an eighth of a grain for a grain. M. Magendie recommends the syrup of these salts, four grains of the salt to a pound of syrup. The sulphate is preferable to the acetate on account of its solubility. Being perfectly soluble in cold water; the acetate is also rendered perfectly soluble in water by adding a few drops of acetic acid to it.

For a further description of morphia and its preparations, see the article opium.

Narcotine.

This preparation is not used as a medicine. For particulars, see description of it under the head of opium, in a preceding part of this work.

Emetine.

This is a peculiar principle lately found in the ipecacuanha. M. M. Pelletier and Magendie states that this substance being much more active than the Ipecacuanha itself, without possessing its disagreeable taste or nauseous smell, might upon all occasions be substituted for it with advantage. Emetine is little used in this country, much less than most of the other proximate principles.

To prepare emetine, the ipecacuanha is reduced to a coarse powder and digested in æther at 60°, to dissolve the fatty odorous matters. Then exhaust it by alcohol in successive portions. Place the alcoholic tinctures in a water bath and re-dissolve the residue in cold water, it thus loses a portion of the wax and a little of the fatty matter which still remained, it is only necessary further to macerate it on carbonate of magnesia, by which it loses its gallic acid, to re-dissolve it in alcohol and to evaporate it to dryness.

The emetine obtained in this way is not perfectly pure, but is the kind altogether in use here, the exceeding high price of the perfectly pure and white emetine has excluded it altogether from use here. The emetine obtained in the above process presents itself in the form of transparent scales of a reddish brown colour, having scarcely any smell, but a bitter though not disagreeable taste.

The action of the pure emetine to that of the coloured, is as one to four; particular care should there-

fore be observed in prescribing emetine to distinguish which kind you intend, or serious mistakes might occur. In prescribing emetine it should be recollected that it is little soluble in water, and when we wish to give it in an aqueous vehicle, it should previously be dissolved in a little acetic or sulphuric acid; emetine is administered under the form of syrup or pastiles. M. Magendie has proposed emetic pastiles as a convenient form for children, who cannot be made, without difficulty, to swallow liquids.

Take of refined sugar	4 ounces.
coloured emetine	32 grains.

From this make pastiles of 18 grains, one of which suffices for children and three or four for adults.

Pectoral Pastiles of Emetine.

Take of Refined Sugar	4 ounces.
Coloured Emetine	32 grains.

For pastiles of nine grains, one is given every hour; if more frequently, nausea will be excited.

Syrup of Emetine.

Take of Simple Syrup	lbi.
Coloured Emetine	16 grains.

Make a Syrup.

The above syrup may be substituted for the syrup of ipecacuanha used in France.

The Pastiles and Syrup of Emetine.

May be made in the same manner as the above by using one fourth the quantity of pure emetine, that is, 8 grains instead of the 32 grains of coloured emetine.

For the alcalies of cinchona bark, see the article cinchona.

Quinine and Cinchonine.

The sulphate of quinine is preferred and in general use, it is prescribed generally in pills of one or two grains each, or in the form of mixture with gum arabic and cinnamon water, the mixture is objectionable on account of the quinine being only partly soluble in water, and is merely suspended for a short time by the mucilage of the gum arabic. The following I consider a more eligible mode of exhibition as it forms a perfectly transparent and entire solution, which will keep unaltered for any length of time.

Take of Sulphate of Quinine	8 grains.
Alcohol	$\frac{3}{i}$.
Acid Sulphuric	6 drops.
Aqua Cinnamon	1 ounce.

Reduce the quinine in powder, and add by degrees $\frac{3}{ii}$ of water, in which the sulphuric acid is mixed, and as soon as dissolved, add the remainder of the cinnamon, water, and alcohol.

Veratrine.

This very acrid alkalive principle is met in all the plants of the family of veratrum, and especially in the sabadilla, colchicum and white hellebore; on ac-

count of its strongly purgative property it can with advantage be substituted for these plants.

To obtain the Veratrine.

The seeds of the sabadilla are to be treated repeatedly with boiling alcohol. These tinctures filter while still nearly boiling, which will deposit on cooling, whitish flakes of wax; the substance in solution reduced to the consistence of extract, is to be taken up by cold water and re-filtered. There then remains upon the filter a small quantity of fatty matter, the solution is to be slowly evaporated. A precipitate is to be formed of an orange yellow colour, which exhibits the characters of that colouring matter which is found in almost all woody vegetables; a solution of acetate of lead is now poured into this highly coloured liquid, and there forms immediately a new and very abundant yellow precipitate, which is separated by filtration. The lead is separated by means of sulphuretted hydrogen, the liquor is then filtered and concentrated by evaporation, afterwards treated by magnesia and again filtered. The magnesia precipitates is next exposed to boiling alcohol, and the spirituous fluids being evaporated, yield a pulverulent substance extremely acrid and possessing all the alkaline properties, by frequent solutions in alcohol and precipitations this substance which is at first yellowish, will become very white and perfectly inodorous.

Its taste is very acrid, without any perceptible bitterness, but however small the quantity taken into the mouth, it excites profuse salivations. It is per-

fectly inodorous, but must not be smelt too closely, for even the trifling quantity carried by the air into the nasal cavities is often sufficient to produce violent and dangerous sneezing, a quarter of a grain conveyed into the intestinal canal readily produces very copious dejections and by a quantity trifling beyond this, vomiting more or less violent is excited. M. Magendie however, has lately given it to the amount of two grains in 24 hours, without excessive purging; in the case of an old man who had suffered an appoplectic attack, which furnishes another proof that the state of the nervous system materially influences the action of medicines.

M. Majendie thinks it should take the place of those pharmaceutical preparations whose basis is either colchicum or hellebore, they would thereby be rendered more powerful therapeutic agents, and at once more convenient and certain. By this change the tincture of colchicum, the eau medicinale, and some others, would lose that uncertain character which gives just cause of dissatisfaction with them.

M. Magendie has proposed the following formula:

Pills of Veratrine.

Take of Veratrine ½ grain.

Gum Arabic and Syrup sufficient to make six pills, one of which is to be administered, and if no purging follows 3 may be given in the course of the day.

Tincture of Veratrine.

Take of Veratrine	4 grains.
Alcohol	1 ounce.

This tincture may be given in the quantity of from 10, 15 to 25 drops, in a cupful of any mild or simple drink. It may be administered internally instead of the tincture of colchicum in anasarca and other varieties of dropsy, and externally in frictions in the same diseases, and also in gout.

☞In Ratier's formulary *one ounce* of veratrine is directed to be used with four ounces of alcohol, and the dose is directed in the same quantity as the above prepared with four grains. This is certainly a very great error and might lead to very serious accidents.☜

Solution of Veratrine.

Take of Sulphate of Veratrine	1 grain.
Distilled Water	2 ounces.

To be substituted for eau medicinale of Husson.

Ointment of Veratrine.

Take of Veratrine	4 grains.
Axunge	1 ounce.

In external applications in cases of chronic rheumatism, anasarca and gout.

PRUSSIC ACID.

This very powerful medicine was discovered by Scheele in 1770, although he could only obtain it mixed with variable proportion of water. To M. Gay Lussac we are indebted for its acquisition in the state of purity.

For the preparation of prussic acid see Coxe's dispensatory, and most of the chemical works.

Prussic acid is readily decomposed if left to itself in well stopped vessels, it sometimes decomposes in less than an hour, and it can rarely be preserved for any length of time. This circumstance forms a considerable objection to its use. It should be kept in black bottles, as light is found to decompose it rapidly; its taste at first is an agreeable freshness, but soon becomes acrid and irritating. Its odour is powerful and noxious, being insupportable when not mixed with a considerable quantity of air, it then resembles the smell of bitter almonds. Its action on animals is very powerful one drop of the *pure* acid introduced into the fauces of a remarkable strong dog killed him instantly; a few particles applied to the eye will produce effects almost equally sudden. The acid which we receive is not so strong, and is called medicinal prussic acid; prepared no doubt from the formula of Scheele, or the acid of Gay Lussac diluted. Prussic

acid diluted according to the formulas we are about to give, has been successfully employed in all cases of morbid irritability of the pulmonary organs, it is also advantageously employed in the treatment of nervous and chronic coughs, asthma and hooping cough, and where this symptom is sympathetic with an affection of some other organ, as also in dispepsia.

The acid prepared by Scheele's process, is very variable, in consequence of the arbitrary discretion which the process allows the operator. That of Gay Lussac is much better adapted for use when properly diluted being of more uniform strength. It is to be mixed with six times its volume of distilled water. This is the preparation which M. Magendie has given the name of medicinal prussic acid, and is about the strength of the prussic we now receive, so that physicians can prepare it according to the following formular:

Pectoral Mixture.

Take of Medicinal Prussic Acid	ʒi.
Distilled Water	℔i.
Refined Sugar	ʒiℊ.
Mix.	

Of this mixture a tablespoonful may be taken night and morning. The dose may be gradually increased to five or six times this quantity, it is very important that the mixture should be well shaken immediately before using it, to avoid serious consequences, as the acid sometimes floats on the surface of the water.

Cyanic Syrup.

Take of	Simple Syrup	1 pound.
	Medical Prussic Acid	ʒi.
	Make a Syrup.	

This preparation is used in common pectoral drinks, and as a substitute for other syrups.

In consequence of the variable strength of the prussic acid, and preparations made by different processes being indiscriminately sold; the faculty should be cautious in their prescriptions for it, to ascertain if possible the strength of it, or to begin with a very small dose, which can be gradually augmented until he discovers what quantity would be most judicious to employ.

Cyanuret of Pure Potassium.

M. M. Robiquet and Villermer have proposed the solution of the cyanuret of potassium as a substitute for the prussic acid, its action on the animal system being the same; which being an uniform preparation, will obviate the inconvenience of the variable strength of the prussic acid. This preparation has not yet been used in this country.

Cyanuret of Zinc.

This preparation of late has been employed in Germany instead of the hydrocyanic acid, and has obtained the reputation of possessing decided vermifuge powers. The following is the mode of prepar-

ing a composition which is apparently the one in vogue in Germany.

M. Pelletier has succeeded in obtaining this preparation by the following process: Sulphate of zinc is precipitated by hydrocyanate of potass; which forms a triple hydrocyanate of zinc, which being well dried and calcined at a dull red heat, is converted into cyanuret of zinc. It always contains however, cyanuret of potassium.

This preparation may be given in the same doses as cyanuret of potass, beginning with one fourth of a grain, and advancing gradually to a grain and a half in a mixture to be taken by spoonful. But caution should be particularly observed in its administration.

Dr. Henning reports (in Hufleand's Journal for 1823), that this medicine has been successfully employed in all cases where prussic acid is applicable, more especially among children in cases of worms. He there gave one grain with powder of jalap.

Cyanuret of Iodine.

This preparation has not yet been used in medicine, nor its effects on the animal system yet ascertained. M. Serullas is of the opinion from its composition, that it ought to produce powerful effects on the animal economy, and that probably as a medicine occasion may be found for its employment. It does not however appear to be so deleterious as the nature of its elements would lead us to suppose. M. Serullas tasted it, and several persons in his laboratory. M.

Thenard had furnished M. Magendie with a sufficient quantity of this substance but was not able to report yet upon its mode of action.

Solanine.

This alkaline principle exists in the leaves of the solanum dulcamara, and is also found in the greatest abundance in the berries of the solanum nigrum, where it exists in the state of malate. In order to obtain it the juice of these berries when filtered, is to be treated with ammonia, which produces a grey coloured precipitate, this deposite collected on a filter, washed and treated with boiling alcohol, yields by evaporation a salafiable base, which if the berries have been perfectly ripe is in effect sufficiently pure. If the berries were green the solanine will contain a portion of green colouring matter, which is with difficulty separated. Introduced into the stomach of a cat to the amount of two to four grains, it produces violent vomiting, followed quickly by a state of drowsiness which lasts several hours. The acetate is the only salt of solanine which has been tried upon the human species. In the dose of a quarter of a grain it produces nausea but the tendency to sleep has not been remarked.

From what has been reported of it, it appears that solanine like opium may produce vomiting and sleep, but its emetic powers seem to be more decided than those of opium, the narcotic properties are evidently much less so. It has not yet been given in cases of disease, but it may be employed wherever the extract of solanum nigrum or that of dulcamara may be indicated.

Delphine.

This alkali was detected in 1819 in the seeds of the delphinum staphisagria. It has not yet been employed as a medicine, but if the stavesacre possesses any medical power it no doubt resides in this alkali, it may therefore be employed where this plant is applicable to diseases, and the salts, of which it forms the base, will there be preferable on account of their solubility.

Urea.

Is the immediate principle of the urine of mammiferous animals. It is obtained by evaporating the urine to the consistence of syrup, forming a supernitrate of urea by nitric acid, and decomposing again by sub. carb. potass, by which the urea is obtained in crystals.

M. Fouquier has employed the urea as a diuretic, though to M. Balley it does not appear to possess that property, the dose is from 50 to 60 grains. It does not appear to be a medicine likely to prove very important.

Thrydace or Lactucarium.

M. Bidault de Villers had for a long time employed the inspissated juice of the garden lettuce, and M. Francois has proposed to renew its use under the name of thridace. He ascribes to this substance a sedative action milder than that of opium, inasmuch as it is accompanied neither with constipation nor

stupor. The dose is two grains. It is necessary says M. Francois, to increase rapidly the doses and for one or two days to interrupt its exhibition, as the stomach very soon accustoms itself to its action. It may be carried to the extent of eight grains taken in 3 doses during the 24 hours without any inconvenience.

Preparations of Gold and Platina.

The preparations of gold have been highly extolled in inveterate syphilitic affections. With M. Cullerier who has given them a persevering trial, they have not succeeded. They are difficult to manage, as much on account of their great activity, as on account of the facility with which they are decomposed. The dose ought to be extremely small, not exceeding the fifteenth or twentieth of a grain. The same observations may be applied to the salts of platina.

Four preparations of gold are now employed in medicine.

1st. The chlouret or muriate of gold.

2. The chlouret or muriate of gold and soda.

3. The oxide of gold.

4. The oxide of gold by tin or purple powder of cassius.

The muriate of gold is that most generally employed in medicine and is preferable to the other preparations.

Lupuline.

Is the active principle of the hop, (Humulus Lupu-

lus) it is in the form of small shining yellowish grains, which cover the base of the strobiles of the hop, it is of a golden yellow colour, of an aromatic odour and pulverulent. Upon analysis it is found to consist essentially of rosin, a little volatile oil, and a bitter principle; its taste is extremely bitter. Magendie states it is soluble in water, alcohol and æther. I have only found it partly so in æther, and that alcohol was the best menstrua. M. Magendie has not recognized in lupuline, the narcotic properties advanced by Professor Ives, of New York; although this is one of the properties he observes most readily manifested in his experiments with it on animals.

It may be administered in the form of powder, pills, tincture, or syrup. It can be readily reduced to powder, by mixing it with two parts of sugar and triturating, then gradually pound them together in a mortar.

Pills of Lupuline.

May be made of two grains each, it may be beaten into a pillular mass without any adjuvant.

Tincture of Lupuline.

Take of Powdered Lupuline	1 ounce.
Alcohol at 36°	4 ounces.

Digest it for six days in a close vessel, strain, press it strongly and filter: Magendie directs it made with two ounces of alcohol, and when pressed, sufficient alcohol is added to make up three ounces of tincture; this is certainly objectionable, for the quantity of al-

cohol which is added to the tincture, would certainly be preferable to add while digesting, as the two ounces of alcohol does not exhaust the lupuline, and barely covers it, four ounces is quite small enough; and I even think that six or eight ounces of alcohol would be preferable, and would then be considerably stronger than the tincture of hops.

Syrup of Lupuline.

This is made by adding the tincture of lupuline to simple syrup. The doses of these preparations are not yet accurately fixed, but as the lupuline possesses no poisonous quality, the dose may easily be determined by the practitioner.

Lupuline has generally been prescribed, in this city, in doses of two or three grains; and I have been informed by several of the faculty, that it possessed anodyne properties, and was a highly valuable substitute for the hop.

Oil of Croton.

This is a very powerful purgative oil, it possesses a strong peculiar smell and a very acrid and spicy taste, it is extracted from the seeds of the croton tiglium, a shrub of the family euphorbia, which grows in the East Indies. It was introduced in 1630, and was employed by several physicians with complete success in dropsy, constipation, &c. one drop in Canary wine was at that time a common purgative. The medicine however had entirely fallen into neglect in Europe, when Mr. E. Conwell, in the En-

glish East India Company's service at Madras, recalled attention to it. It is generally employed in India, and has been lately introduced into England.

It is obtained from the seeds by expression and boiling, similar to obtaining the castor oil. Dr. Nimmo of Glasgow has obtained the oil by digesting the bruised kernels in sulphuric æther, by this process he obtained from 300 grains of the seed two drachms of the oil; which had the taste and medicinal properties of the common oil of croton.

The croton seeds will yield about fifty per cent. of oil.

The oil of croton may be employed as an ordinary purgative, when there does not exist any symptoms of irritation about the stomach or intestinal canal; it should especially be preferred when common purgatives have been administered without success in apoplexies, in dropsies, and when mechanical or other obstacles oppose the action of usual purgatives, but above all when it is requisite to produce action on the bowels speedily.

It is recommended by Dr. Ainslie of Madras, to be externally used in cases of rheumatic affections.

A number of cases of obstinate constipation is cited by Dr. Kinglake as having been cured by a single drop of this oil given in the form of a pill.

In this manner he cured a patient labouring under colica pictonem (see Bulletin des Sciences Medicales Fevrier, 1824, page 145.)

Soap of the Oil of Croton.

M. Caventon, to obviate the inconveniences arising from the variation in the size of drops, has prepared a soap according to the following method. Two parts of the oil, and one part of the liquid caustic soda of the French pharmacopœa, are to be triturated together without heat. When it has acquired consistence, it is poured into a paper mould, and cut in slices to be kept in a large mouth stoppered bottle.

This soap has been given by M. Balley, in doses of from two to three grains, in pills or solution, and the effect has been the same as oil of croton.

The oil of croton may be advantageously used as an adjunct to other cathartic medicines, which would increase the activity and not enlarge the bulk.

Professor Coxe, suggests that a similar acrid and powerful oil exists in the *skins* of the castor oil bean, and suggests the importance of experimenting upon them; the seeds when taken into the stomach, most certainly in small quantities excites very considerable and increased action, more than equal to the quantity of oil which would result from ten times the quantity of seeds, it therefore must be evident that there is still a very active principle left in the residium of the beans after the oil has been expressed; and hence it is, that the hot pressed oil is more active than the cold pressed, which, no doubt, arises from pressing the seeds more closely, and the heat separating a portion of this acrid oil, from the skins. There can be no doubt but that the opinion of Pro-

fessor Coxe would be verified by experiments upon this article.

Oil of Euphorbia Lathyris.

Dr. Carlo Calderino obtained an oil from the seeds of the euphorbia lathyrus, or spurge, which may be used with advantage for the oil of croton tiglium, and which, like it, acts in a very small dose.

The oil is obtained by simple process of expression, 14 ounces of seeds will yield six ounces of very prime oil.

My friend, Dr. Milnor, of Allentown, New Jersey about a year since, sent me some of the seeds of the euphorbia, which grew in the neighbourhood, very abundantly. I have expressed the seeds, and obtained the oil similar to that imported; since which Mr. Thomas Bellanger, of New Jersey, has sowed an acre of this plant, and manufactured considerable of the oil. The euphorbia grows abundantly in this country and will no doubt be extensively cultivated should full experience with the article justify its value as a medicine.

The oil differs from croton in not being acrid, nor possessing an unpleasant flavour; it very much resembles the castor oil; it has the same colour, but not quite so dense, and does not possess any odour. It forms like croton oil soap with alkalies. The action of the oil of euphorbia is purgative, and its effects is very certain and prompt. It is to be considered, says the Italian author, as a very mild purgative; it does not produce vomiting, colic, or

tenesmus; it may be administered even in dysenteries, when there is irritation in the intestinal canal. It may be employed in all cases where it is desirable to purge gently, and with a small dose of medicine. The dose of the oil of spurge is from 4 to 8 drops—children of two or three years, may take a dose of 3 drops in chocolate. To very irritable subjects an emulsion may be given, made with eight drops of the oil, some aromatic water, and syrup of orange peal; this has in several cases produced very good effects.

Gentianine.

This is the active principle of the gentian root of commerce. It is little soluble in cold water, but dissolves in boiling water; it is yellow, inodorous, possessing very strongly the aromatic bitter taste of the gentian. All which I have seen imported is of a dark brown colour, and is no doubt very impure, resembling more a common extract than any other of the alkaline or proximate principles.

The gentianine is obtained by digesting the powder of gentian in cold æther, which furnishes a green tincture; this being filtered and poured into an open vessel, if sufficiently concentrated, will deposit a yellow crystaline mass; this mass is to be treated with alcohol, which filtered and exposed to a strong heat, the yellow crystaline substance begins to appear, assuming at the close of the evaporating process a solid mass, extremely bitter; taken up again by alcohol it is partially dissolved. This last spirituous solution, besides the bitter principle of the

gentian, contains an acid substance and the odorous principle also. Upon evaporating this liquid to dryness, washing the residuum in water, adding a little calcined and well washed magnesia, boiling and evaporating in a water bath, the greater part of the odorous matter of the Gentian is driven off, the acidity is removed by the magnesia, and the bitter principle remains partly free and partly in a state of combination with magnesia, to which it imparts a beautiful yellow colour. Then upon boiling this magnesia with æther, the greater part of the bitter principle is obtained pure and is insulated by evaporation. The tincture is the most preferable form for its administration, and it may be made in the following manner.

Take of alcohol at 24°	1 ounce.
Gentianine	5 grains.

This may be substituted for the tincture of gentian, and used in the same circumstances.

Syrup of Gentianine.

Take of simple syrup	lbi.
Gentianine	16 grains.

Make a syrup.

This is one of the best bitters that can be employed in scrofulous affections.

Chlorurets of Lime and Soda.

The advantages of these substances were made known in 1812, by M. Mazuyer, professor to the faculty of medicine at Strasburg. At that time he employed them with great success, in the wards of hospitals in which typus fevers was then raging, and for the purification of the theatres of anatomy. M. Labarraque has demonstrated by a great number of experiments, that the chloruret of soda was one of the most powerful agents for the instantaneous annihiliation of that disgusting fetor, which is produced by the maceration of intestines in water. The same gentleman extended the use of the chlorurets to the purification of all animal substances under putrefaction, and many distinguished physicians have used them as medical agents. A prize of three thousand francs to M. Labarraque, and two thousand to M. Mazuyer, was decreed by the Academy of Sciences, for this useful discovery.

The method for preparing the chlorurets, although known for a long time, it will nevertheless be useful to describe the manner in which M. Labarraque prepares them in order to obtain always the same compound:

The Chloruret of Soda

Is prepared by dissolving five pounds of pure carbonate of soda* in 20 pounds of distilled water. Put

* Soda Sub. Carbonas.

the liquor into a flask of sufficient size, that it may be about three fourths full. Expose a glass balloon sufficiently large to contain four pints, having a long neck with a wide mouth, introduce into it 567 grammes of hydrochlorate of soda, and 448 of the peroxide of magnesia; lute to the mouth of the globe a large curved tube, and a tube with a double curve for the introduction of the weak acid; place the first tube into a flask containing a small quantity of water for the purpose of washing the gas; and from this flask should proceed a large curved tube, communicating with the vessel containing the saline solution.

The apparatus being properly disposed, and the luting very dry, pour into the bent tube the diluted acid cold, and having been mixed for some hours with water, apply fire to the sand bath and continue the heat until chlorine ceases to be disengaged. The operation being finished, examine the strength of the product, by its action in decomposing the sulphate of indigo.

The chloruret of soda has chiefly been employed in medicine, and has produced highly satisfactory results, and has succeeded in all cases in which it has been used for the removal of general or local infections. Thus in carbuncle, in hospital gangrene, bad venereal ulcers, sloughing wounds, or those of the phagedenic kind, rapid advancement has been observed towards cicatrization, by the employment of the chloruret diluted in 10 or 15 parts of water. In numerous patients affected with ulcers

ted cancer of the breast, or of the uterus, which were in the hospital, it has been used daily as a lotion at the time of dressing; by this means the fetor of the discharge has been destroyed, and the sufferings of these unfortunate women have been much meliorated; and they have found from the use of these lotions, their sleep has been more tranquil. M. Alibert has prescribed similar lotions with advantage for herpes exedens. M. M. Roche and I. Cloquet have found it equally useful in the worst cases of gangrenous ulcers. M. I. Cloquet directs the diseased limb to be bathed in a solution of one part of the chloruret, with from 10 to 15 of water, and administer 25 or 30 drops of it in a pint of barley water. It has been used as a gargle in sore throat, as a lotion in ulcerated gums, exhaling an offensive odour. M. Lisfranc has used it extensively in burns and common ulcerations; for this purpose a solution of the chloruret, marking three degrees of the chlorometer of Gay Lussac.

The chloruret of lime is prepared by placing the hydrate of lime on shelves of a convenient distance from each other. The gas is disengaged from a similar mixture to that employed for the chloruret of sodoa, and passed into a chamber containing the lime, which must be occasionally stirred, so that the chlorine may act equally on all parts of it; the hydrate of lime sufficiently charged with chlorine, becomes moist, by which it is ascertained that the operation is about to terminate.

This is a very powerful disinfecting agent, and can be used in the following manner. Previous to examining an animal body in a putrifying state, it will be only necessary to procure a bucket, and mix the chlorate of lime with water. Let a sheet be completely moistened with this solution, and wrapt about the whole subject, so that every part of it may be covered. The putrid odour will soon cease. If there be an unpleasant smell in passages, stair cases, &c. let them be sprinkled with the liquid. Care should be taken to sprinkle the cloth which covers the body frequently with this liquid, by which means the offensive odour will be prevented. The chloruret of lime may be used with advantage for the disinfection of privies, water closets, ships, stables, hospitals, wards, &c. for which purpose it will be sufficient to dilute the chloruret in 60 times its weight of water, and to sprinkle the clear solution over the surface of the objects or places which are intended to be purified; a broom or watering pot may be used for the purpose, and a few minutes will be sufficient to complete the disinfection.

In wards with patients the solution is to be poured into deep plates, and placed under the beds. The infectious odour cannot spread, because it is destroyed in proportion to its formation, in consequence of the continual disengagement of chlorine.

Several physicians and surgeons of the hospital have made a useful application of these substances in the treatment of burns, chronic inflammation of

the mucous membrane, &c. M. Lisfranc has used the following preparation successfully in burns:

Chloride of calcium (marking 3 degrees of the the chlorometre of Gay Lussac)	ʒ 4
Water	lb i.

This solution has also been used as an injection in the case of chronic catarrh of the vagina or bladder, and has been equally employed in the treatment of gangrene. Besides its utility as a disinfecting agent, it appears also to exert a beneficial influence on the progress of cicatrization.

Lozenges of Bicarbonate of Soda, or Digestive Lozenges.

These lozenges have proved highly beneficial in the treatment of dispepsia, and have been found useful in promoting digestion by saturating the free acid of the stomach which is essential to the complete solution of the aliment.

Formula for preparing the digestive lozenges of M. D'Arcet:

Take of dry pure bi-carbonate of soda	5 grammes.
Fine white sugar in powder	95 do.
Mucilage of gum tragacanth prepared with water	q. s.
Essential oil of mint	2 or 3 drops.

Let the bi-carbonate of soda and refined sugar, each reduced separately to a fine powder, be put into a very dry bottle. Shake the bottle well that the powder may be thoroughly mixed. Take any quantity of this powder, let it be well mixed on a marble

slab, with a sufficient quantity of mucilage of gum tragacanth, and oil of mint; form the mass into lozenges, weighing about one drachm, dry them in the air or on a stove. As these lozenges attract slightly the moisture of the atmosphere, they ought to be kept in well stopped bottles, or in a dry place. They may be flavoured with any other essential oil, or with the balsam of tolu, which is very suitable for that purpose.

Much benefit has been obtained from the use of these lozenges, taken immediately when the functions of the stomach are found to be in a deranged state; if taken before a meal, the digestive functions will be performed with more facility. These lozenges being very useful to assist digestion, ought to be prescribed before and after a meal to patients affected with gout or calculi.

Digitaline.

M. Augusti Leroyer has obtained the active principle of digitalis, which he has obtained in well defined crytals of various forms. M. Leroyer has made the following experiments with it: he dissolved a grain of digitaline in three gros of distilled water, which he injected into the abdomen of a middle sized rabbit; after some minutes the respiration became slower, the pulse which was rapid fell to 60, and became very irregular; all the vital phenomena became gradually extinct; it died without agitation and without distress, like falling asleep. A grain and a half of digitaline was dissolved in half

an ounce of water, and was injected into the jugular vein of a middle sized dog; he died in 15 minutes. The arterial blood of the animals which have been killed by this substance, present a very strong venous colour, &c. &c. It appears that the deleterious principle in solution in the blood, acts directly upon the nervous system.

This subtance has not yet been employed as a medicine, and nothing therefore can yet be said of its action on the human system.

Phosphorus.

This substance has been little used in medicine. It has lately been much extolled by Dr. Lobstein; the diseases in which it has been given with great success, according to the author, are extreme prostration of strength, obstinate intermittent fevers, rheumatic and gouty affections, &c. &c.

Bertrand Pelletier, who has made very extensive and useful researches respecting phosphorus, has pointed out a very excellent method of preparing this substance for medical purposes. This process consists of putting six grains of phosphorus, cut into small pieces, in an ounce of sulphuric æther; this mixture must be occasionally agitated, for 3 or 4 days. The dose of this medicine is from 10 to 15 drops in a glassful of barley water, or any convenient vehicle, and repeated, so that from 120 to 150 drops may be taken in the space of 3 or 4 days. This liquid may be used in frictions also when such are deemed necessary. M. J. Pelletier objects to

these preparations in which the phosphorus is dissolved in a volatile fluid, only such as æther and essential oil, because exposed to the air and heat of the body driving off the menstruum the phosphorus remaining per se. may influence by heat and friction, but with fat or fixed oil this inconvenience will not take place, because the substances not being volatile, cannot leave the phosphorus.

Salacine.

This new and valuable article of the materia medica, is the alkaline principle of the willow bark, and has acquired considerable reputation in Europe as a substitute for quinine. The following is the process for preparing it, as recommended by M. Peschier. The bark of the willow is to be dried, crushed, boiled for one or two hours in water, and the liquid separated by a cloth, and powerful pressure. Sub. acetate of lead is to be added as long as precipitation occurs; the whole filtered; the clear liquor boiled with carbonate of lime sufficient to decompose the excess of acetate of lead; saturate the acetic acid, and remove the colour. Being left to settle, the clear liquor is to be decanted, the deposit is to be washed twice or thrice, the washing liquor added to the former, and the whole evaporated to the consistence of an extract. This extract, while hot, is to be put on bibulous paper and pressed for some hours; after which, it is to be digested in alcohol of s. g. 0.847, the fluid filtered and concentrated, when it will yield crystalised salacine, very white

and pure. Salacine when thus prepared, and administered in doses of 3 to 5 grains, repeated at intervals of one hour during the apyrexia of intermittent fevers, is said to be found effectual in arresting their progess with more certainty than the sulphate of quinine. Salacine (according to M. M. Pelouze and Jules Gay Lussac) when pure, forms white crystaline prismatic needles. It has a bitter taste and somewhat the odour of willow bark. One hundred parts of water dissolve 5. 6 parts of salacine at 67° F. at 212° F. it appears to dissolve in any proportion. It is equally soluble in alcohol, but æther and oil of turpentine takes up no portion of it.

This article has lately been introduced here, and as far as it has been yet used, has given the most entire satisfaction. Dr. Miller of Lancaster informs me he has successfully treated several cases of intermittents, in which quinine appeared to have no effect, and which readily yielded under the use of the salacine; and from the experiments which he has made with it, is fully of the opinion that it is a very valuable medicine, and more efficient than the quinine.

SMILAX

SARSAPARILLA.

This highly valuable article of our materia medica, has been variously represented. The greater part of our most respectable physicians however concur in the opinion that it is a medicine of very useful powers in venereal scrofulous, and mercurial diseases. When combined with mezerion, guaiacum, sassafras, dulcamara, &c. &c. becomes one of the most efficient compounds for depurating the blood and removing most constitutional diseases arising from this cause.

This preparation has been much recommended in scrofulous and rheumatic affections, and in some of the chronic diseases of the skin. Quarin regarded the compound decoction of sarsaparilla, as the most useful remedy we possess in gout: Sydenum also considered it useful in this affection, and Scudemore says it sometimes proves beneficial during the state of convalescence. The mezerion, one of the ingredients of the compound sarsaparilla, is recommended in venereal and mercurial diseases, and in chronic cutaneous eruptions. Dr. Cullen states that he found it successful in diseases of this kind. Lauris sassafras, another of the constituents of the compound

sarsaparilla, has also been recommended by some of the best authors. Alibert speaks very favourable of its virtues in rheumatic affections, he administered it frequently at the hospital St. Louis, and it always appeared to him, he observes, to exert a manifest action on the cutaneous emunctories. He mentions a case of chronic rheumatism which yielded to the infusion of sassafras, after a great variety of other remedies had been tried ineffectually. He also speaks of two cases of gout, in which the sassafras was employed with complete success. Professor Eberle also states that he has known the continued use of an infusion effectually to cure a case of inveterate rheumatism, he further states that it has generally been employed in the form of infusion, but the oil is the most efficient, and therefore the best preparation. *Guaiacum* another of the ingredients of compound sarsaparilla, stands high in the estimation of almost every physician. In the treatment of rheumatism, says a distinguished author, it has long been considered as peculiarly serviceable, and is unquestionably a remedy of very considerable value in this disease, it has also been prescribed, continues the author, in affections arising from the influence of mercury, and in such cases I have had several striking examples of its usefulness. Mr. Pearson says, I have given the decoction of guaiacum with the best effects, to a great number of patients, in cutaneous diseases, in ozæna and scrofulous affections of the membranes and ligaments.

From what has been said from the most respecta-

ble sources of authority, in support of the different articles constituting the compound sarsaparilla, it would appear most unquestionably to be a medicine, when combined and properly prepared, possessing the most valuable properties, and deserving the particular attention of the faculty.

The preparations of sarsaparilla has most generally been improperly made, and there can be no doubt, but the variable opinions which have been entertained of its properties by different physicians and writers, have arisen entirely from the various modes of its preparation. The compound decoction of sarsaparilla, requires considerable boiling to take up its active and soluble matter, this I do not say from speculation, as many have done, but from actual experiments repeatedly made for the purpose, expressly for ascertaining and establishing the fact, and I have found, that after several days boiling, these ingredients, (and particularly the sarsaparilla,) contained a very considerable proportion of extractive matter quite as active as that obtained by the first boiling. It has been foolishly suggested that decoction injures its active properties, and that it should be only macerated and not boiled, this would merely wash off the dirt which adheres to the roots, together with some of the decayed corticle fibre which is more or less found among the freshest roots which we receive, this may give a little colour to the decoction, and may be mistaken for its active principle. After undergoing this operation the root would be in good condition to begin the decoction. I have experimented

with various menstruum upon the roots of sarsaparilla, and find that water is the best, producing a more active preparation of the root than any other, and in a larger quantity. Alcohol is the next most active menstruum, but it is altogether objectionable from the increased expense incurred in its preparation, producing an extract possessing no advantage whatever over that of the water.

Numerous preparations of sarsaparilla and various modes of preparing them have been given, all of which of course will differ according to the mode of preparation which each individual may adopt. It is therefore an object of the highest consideration and importance, that we should have a standard preparation of uniform strength, and possessing the most advantages; also, the trouble and difficulty which patients are subjected to in making the decoction and syrup, has rendered it a still further object of importance to procure a preparation of it in a more convenient form, than those usually prescribed. Sarsaparilla, as before stated, requires considerable boiling, to take up the extractive matter, and it has consequently, most frequently been improperly made, by those unacquainted with pharmaceutical preparations. To obviate these difficulties, I have made a number of experiments to ascertain the most effectual means of extracting the virtues of the compound sarsaparilla, and to discover the most eligible form of preparing it for exhibition, which has resulted to my most entire satisfaction, and it is with much pleasure I now offer to the faculty my

compound fluid extract of sarsaparilla, which possesses all the virtues of this medicine in a highly concentrated degree. It possesses numerous advantages over sarsaparilla, its syrup, decoction, and solid extract, and is intended as a preparation of much easier portability—not liable to injury by long keeping, and consequently better adapted to the use of persons travelling or residing abroad.

The *fluid* extract of sarsaparilla is a more convenient article than the solid, the latter requiring some trouble and difficulty to dissolve it, while the former is immediately dissolved when it is put into water, and is consequently immediately fit for use.

As the decoction will rarely keep more than twenty-four hours, particularly in warm weather, it would be exceedingly troublesome for the patient, put under a course of sarsaparilla, which has to be taken for some time, to be obliged to prepare the decoction every day, besides getting a very weak and inferior preparation from the short time he would have to boil it, not taking up perhaps one fourth of its active principle.

The syrup, which is the common preparation generally used, has still further objections; it being the decoction prepared in the common way, overloaded with sugar, which is exceedingly objectionable, as it will be necessary for the patient to surfeit, and not unfrequently nauseate his stomach with a large portion of saccharine matter in taking a dose of the decoction, which is generally weak, so that not unfrequently it might be said with propriety that he

is taking a dose of sugar rather than sarsaparilla, as the former exists in a larger proportion in the preparation. We frequently hear of *concentrated* syrups of sarsaparilla, which is simply change of name for the same article, as it is impossible when a fluid is saturated with sugar, to take up an extra portion of any substance; and if the decoction is much concentrated, a portion of the fluid extract which it holds, would be precipitated by the sugar. I will not in this place call in question the essays of one of my fellow competitors to support or refute the value of the extract of sarsaparilla, but might quote numerous authors, whose opinions would have *weight and influence*, and whose experience and observations would entirely sink and outweigh those little acquainted with the subject, who from want of experience aided by prejudice, have fallen into the greatest absurdities. I will simply select one on the present occasion, which is published in the Medico-Chirurgical Review, for July 1830, Vol. 18, No. 41, page 162—"Observations on the Extract of Sarsaparilla in venereal affections, &c. by Benjamin Traver's F. R. S. &c. &c." Speaking of the compound of syphilis and mercury, he states that no remedy, next to the adjustment of diet, is equal to the extract of sarsaparilla. The extract dissolved in water or milk, is the menstruum which I rely most upon in these cases, its power is extraordinary, more so than any other drug which I am acquainted with. To regard it as inert, as a mere diluent or an offensive nutrient, is either a proof of very limited experience or very prejudiced

observation. It is in the strictest sense a tonic, with this invaluable attribute, that it is applicable to a state of the system so sunken, and yet so irritable as renders other substances of the tonic class unavailable or injurious.

We take the liberty of marking in italics, says the distinguished editor, Dr. Johnson, the passage respecting sarsaparilla, because we most cordially concur with Mr. Travers in the statement, which it contains in favour of the valuable properties of the extract of sarsaparilla.

The compound fluid extract of sarsaparilla, which I have prepared has decidedly proved one of the most popular medicines ever introduced in Philadelphia. There has been a little clamour against it by some of my worthy competitors in trade, (this must be expected in all valuable and extensively used articles, it was so with quinine, and some of our most inestimable medicines,) but it all sinks into insignificance when compared with its general approbation by the faculty, and its extensive use by some of our most distinguished physicians. It has already been sent to almost every populated section of the United States, and whether in town or country, hospital or private practice, it has invariably given to patient and practitioner, the most decided and unequivocal satisfaction, and produced the most salutary and beneficial effects. Numerous letters have been received from some of the most distinguished physicians in the country, and from the professors of several medical colleges, all recommending in the highest terms,

the value of this medicine, and its superiority over other preparations of sarsaparilla. Several cases of secondary syphilis, mercurial and scrofulous diseases, have entirely recovered in the incurable wards of our public institutions, which had for many years resisted every mode of treatment which could be devised. These cases furnish striking examples of the salutary effects of this medicine in arresting some of the most inveterate diseases after the glands were destroyed and the bones already affected.

The dose of the fluid extract is two teaspoons full, morning and night, in a glass of water. Two tablespoons added to fifteen ounces of simple syrup, immediately produces a mixture similar to a pound of the compound syrup of sarsaparilla, and the same quantity added to fifteen ounces of water instantly forms a mixture, equivalent to a pint of the Lisbon diet drink.

One bottle of the fluid extract of sarsaparilla, is fully equal to a gallon of the syrup or decoction as is generally made.

Two grains of corrosive sublimate carefully dissolved in a small portion of alcohol or water, and added to the syrup above formed, will be similar to the anti-scrofulous and syphilitic remedies lately introduced under various names.

The fluid extract of sarsaparilla is now prescribed by some of the most distinguished physicians in this city, and has been more efficient in practice, than any preparation of sarsaparilla yet offered to the public. For the advantages it possesses over the ordinary

preparations. See professor Dewees valuable work on the Practice of Physic, and most of the late standard works on medicine.

It is highly aproved of and recommended by professor Gibson, who has prescribed it very successfully in his practice and prefers it to any other preparation of sarsaparilla.

Professor Eberle in the last edition of his Therapeutics, vol. 2nd, page 206, makes the following remarks: "Carpenter's compound fluid extract of sarsaparilla is a very neat and excellent preparation. It possesses all the active properties of the root in a highly concentrated state, a tablespoon full being equivalent to half a pint of the ordinary decoction. I have used it in several instances with decided benefit. From the smallness of the dose it is peculiarly adapted for administering this remedy to children."

Professor Frost of the Medical College of South Carolina has written to me of the salutary effects of this medicine, in a case of secondary syphilus by using two bottles, united with small doses of the perchloride of mercury, and his high opinion of this medicine and its superior advantages over the ordinary preparations of sarsaparilla.

I might quote numerous authorities in addition, of the most respectable character, but sufficient has been said to establish the character of this preparation, and its decided superiority to the ordinary preparations of sarsaparilla.

CAUTION.

After the reputation of any valuable medicine is established with considerable expense, trouble, and many experiments by the proprietor, he should receive the benefit of it. He is sometimes, however, interrupted by spurious imitation of his preparations, made by the ignorant who prepare inferior and frequently entirely different compounds, and sell them under the same name, and on the reputation of the genuine medicine, *copying the directions, and putting it up in the same bottles and form.* Thus frequently deceiving the public and injuring the reputation of valuable medicines. Under these circumstances, I would beg the faculty to be extremely particular in their orders for the extract of sarsaparilla, and to observe that each bottle will have my written signature without which none will be genuine.

A copperplate label is also on the outside of each bottle, on coloured paper, as a caution.

Oil of Black Pepper.

This article is precipitated in the preparation of piperine. It contains all the heat and acrimony of the pepper in a very powerful degree, and is no doubt the active principle of it. A portion of this oil is always combined with the piperine, to which it no doubt owes its effects. We find all the sensible characters of the piperine to increase or diminish in proportion to its degree of purity, or as it may be more or less combined with the oil; hence

it is that the pure white crystals of piperine are without taste, the yellow crystals possessing considerable heat and acrimony, and the dark greenish crystals are extremely active and powerful, containing nearly fifty per cent. of oil. One drop of the oil of black pepper is equal to four grains of piperine. One drop of the oil of black pepper added to three grains of quinine, will greatly increase the powers of that remedy.

CAUTION.

Physicians should be extremely particular in their orders for this article, as an oil of pepper has been obtained by distillation, which is entirely different from the above preparation, possessing comparatively little or none of the active principle of the pepper—the above preparation is a fixed oil, and of course can not be obtained in this way. The object was no doubt, to obtain a cheaper preparation, but it will not answer the purpose at all, and would therefore be dear at any price. As it has been sold for the true preparation, I make these observations that physicians may be on their guard in relation to it. I received some time since a letter from a highly respectable physician in Virginia, stating that he had been induced to make trial of the oil of black pepper from reading an article of mine on the subject in the American Journal of Medical Sciences, that he had written for some of it, and had obtained an article which did not in any way correspond with my description of it, either in the appearance of the article or in any of its sensible characters. I requested

him to send me on some of it to exmaine, and I was much surprised to find it was the distilled oil of pepper which had been sent to him instead of that obtained in the process of piperine; and it is more than probable others have been equally disappointed.

Oil of Copaiva.

This oil is obtained by distillation, from the balsam, and is a valuable preparation. It contains all the virtues of the balsam in a concentrated state, and being more limpid than the balsam, it is administered with less inconvenience, and is altogether a very considerable improvement in the exhibition of copaiva, and altogether preferable to the common balsam. The dose of this oil is 5 to 8 drops. When distilled in glass vessels and pure, it is preferable to naptha for preserving potassium.

Oil of Cubebs.

This oil is obtained by distillation from the cubebs. It is a very active preparation and possesses all the virtues of the cubebs; and being a very concentrated preparation, is much preferable to the crude substance, which is objectionable from the bulk of the dose, which is otherwise unpleasant. This is a valuable adjunct to the oil or balsam copaiva, ten to twenty drops to an ounce of balsam, will greatly increase the powers of that remedy in gonorrhœa.

CARPENTER'S

CITRATED KALI,

For making Saline Draught or Neutral Mixture.

I know of no article so desirable to the practitioner as the above preparation, for either city or country practice. When made extemporaneously for prescriptions with the lemon juice and salt of tartar, it is frequently not exactly neutralised, and the object and effect of the medicine is thus lost. It is also much more convenient, and at the same time less expensive, and being identical with the mixture fresh made with lemon juice and salt of tartar, is certainly in every respect preferable. It only requires to dissolve one drachm of this salt in four ounces of water, and you have at once the neutral mixture similar and equal in every respect as before said to that prepared with fresh lemon juice and salt of tartar. To the country practitioner this preparation is inestimable, as it furnishes him the means of access to a highly valuable medicine, which he otherwise would be cut off from, by the scarcity, difficulty and frequent impossibility of getting lemons in inland towns, and they are frequently not to be had in some parts of the season in our ports. It is unnecessary to quote any thing in relation to the value of this medicine as a

refrigerent in fevers, &c. &c. as it is appreciated and highly valued by every intelligent physician.

This article will no doubt be altogether used when its properties become generally known. Wherever it has yet been used, it has given the highest degree of satisfaction and produced the most beneficial effects.

Solidified Copaiva.

Balsam copaiva is admitted by all to be one of the most nauseous and disagreeable articles of the materia medica. Disguised or mixed as it may be, its unpleasant nature is still manifest, and little if at all diminished, communicating its nauseous taste, and imparting to the breath its disagreeable odour which is experienced for several hours after each dose, and frequently acting as an emetic or cathartic. From these circumstances, its use is frequently abandoned* in cases where it otherwise might be of the highest utility, and even where it is almost indispensible, and other remedies much less efficient are substituted, thus protracting the cure which could have been speedily effected by the copaiva.

* Our distinguished professor of practice, in the first volume of his therapeutics, page 417, observes, that two circumstances frequently interfere with the exhibition of copaiva, and detracts from its utility. It sometimes purges, and when it does, its efficacy is lost or greatly diminished. If laudanum does not check this injurious tendency, it must be discontinued; till the bowels recover their tone. To the stomachs of some persons, the copaiva is so exceedingly offensive, that it cannot be retained, as it is hardly possible to disguise the taste of the article: it is sometimes very difficult to overcome this prejudice. (See Chapman's Therapeutics.)

Since the introduction of this remedy down to the present period, it has ever been a desideratum to obviate these inconveniences, and it is a circumstance not less unfortunate, and much to be regretted, than it is singular in its character, that amidst the rapid march of improvement and discoveries, (which forms a peculiar character in modern chemistry and pharmaceutical knowledge) an improvement in the exhibition of copaiva, should so long have evaded the vigilent researches of the critical and scrutinising chemist. Under these circumstances I am pleased to submit my preparation of solidified copaiva, which will obviate all the disadvantages possessed by the fluid balsam, and will present a preparation which can be conveniently administered in the form of pills, without communicating its unpleasant taste, or imparting odour to the breath. The solidified copaiva which I prepare, contains an extra portion of the oil of copaiva, which is united to the balsam and solidified together. See my formula for its preparation, in the last (eighth) edition of Professor Coxe's valuable dispensatory. The addition of the oil of copaiva increases its activity considerably; and it is ascertained by careful experiments, that eight grains of this preparation is equal to 30 drops of pure copaiva. The dose therefore is two pills, four grains each, three or four times a day. Solidified copaiva is prepared by many, simply by adding calcined magnesia to balsam, without the addition of oil; this is a much weaker preparation, requiring double the number of pills. Copaiva or extract of copaiva, is also sold; this arti-

cle is almost entirely inert, as the oil to which the activity of copaiva depends is driven off, it is tasteless, and nearly without odour, and of dark colour.

This article therefore, differs from the solidified copaiva as commonly made, as well as from the rezin, being not the least deteriorated in the preparation, or weakened by foreign substances for the purpose of giving consistence. It is particularly recommended to the faculty for its many advantages over the *balsam* and all its preparations.

The oil of copaiva is an active preparation, and it is the best mode of using this article, for being united with the balsam and solidified it can be made into pills, which can be taken without experiencing the nauseating taste of the oil, while the oil alone cannot be taken otherwise than in draughts, which will subject it to the same inconveniences with the fluid balsam, having its disagreeable taste with its unpleasant effects.

Black Oxide of Mercury.

For extemporaneously making the blue pill according to the popular opinion, that the mercury is in the state of oxide in blue mass.

One fourth of a grain of the black oxide is equal to three grains of blue pill. This medicine is highly approved of by many physicians, and preferred by them to the blue mass.

Carpenter's Compound Tonic Extract.

This article is a compound of some of the most active vegetable alkalies, being composed of *cornine*, *quinine*, *piperine*, *capsicine*, *&c. &c.* It has proved more efficient than any preparation yet employed in the treatment of intermittents. Arresting the paroxysms in cases which had resisted quinine, and other remedies in large doses. For an account of the cornine, see Dr. Morton's valuable paper in the Philadelphia Journal of the Medical and Physical Sciences. For an account of the piperine, see my paper in the American Journal of the Medical Sciences.

Caution.

This compound is entirely original with me, and several of the constituents only prepared by me, yet the name has been borrowed for another preparation, and my directions copied word for word, and has no doubt been sold on the reputation of mine. I would recommend the faculty to be extremely cautious and particular in their orders for this preparation, and I am sure they will not be disposed to patronize innovations of this kind, but give preference to the true and original article.

Ext. Sem. Stramonii.

This is a very active and highly valuable medicine Dose one fourth of a grain. For a full account of this article, see a paper published in the 7th volume of the Medico-Chirurgical Transactions.

Extract of Quinine.

This is the residuum of the preparation of quinine and is preferred by some to the sulphate, as it comes much lower than the former, being but one third the price, it would be well for physicians to satisfy themselves of its value. Two grains are considered equal to one grain of the sulphate of quinine.

CARPENTER'S
Selection of Cinchona or Peruvian Barks.

There is no article of the materia medica, in which there has been more fraud and deception than Peruvian bark, the author, under these circumstances, has been extremely particular in the selection of these species, and has them put up in packages with his written signature on each, as a guarantee of their purity, and his responsibility if they should prove otherwise.

Superior Red Bark.

Selected with great care from the cinchona oblongifolia, and put up in pound and ounce sealed cylindrical packages. The *red* when pure, is the best species of Peruvian bark, it contains both the alkalies, quinine and cinchonine, in considerable proportions.

Superior Calisaya Bark.

(CALISAYA ARROLLENDA.)

This is the best species of yellow bark, and derives its name from the province in which it is collected. It is the bark which yields quinine in greater proportion than other species, it is neatly put up in sealed cylindrical packages of pounds and ounces.

Superior Loxa or Crown Bark.

This bark was more esteemed in Spain than any other species, and was selected for the royal family, hence the name crown bark. This is a milder bark than the red or calisaya, its product is cinchonine. It agrees better with the weak and delicate stomach than the stronger barks. This, like the preceding, is put up in sealed packages of pounds and ounces.

Maracaibo Bark.

This is the best species of what is called common or low priced bark, the best bark is cheaper at a higher price, than the present difference which exists between the different kinds of bark; there is no advantage whatever in using inferior bark, but all the disadvantages arise from it; still there are many that will have it, because it is lower priced. To such I would recommend the Maracaibo bark, being much superior to the Carthagena, and at an equally low price.

For a full and detailed account of all the varieties of bark which occur in commerce, see the article cinchona, in a preceeding part of this work.

Sulphate of Cornine.

It gives me much pleasure to announce the discovery which I made of an alkaline base in the cornus Florida, which I have denominated cornine, and which, with acids form neutral salts, the sulphate of which has proved a highly valuable tonic and febrifuge. This article has been very carefully and accurately described by Dr. Samuel G. Morton of this city, in the Philadelphia Journal of the Medical and Physical Sciences, and from the most respectable sources in the Medical profession from various parts of the United States, where this article has been sent, the most corroborating evidences have been received of the unequivocal success of the cornine in the treatment of intermittent and remittent fevers, in the same doses as the quinine, and the only circumstance which precludes its competition with that substance, is the minute comparative proportion of cornine yielded by the cornus Florida. If, however at any time, we should fail in our supplies of cinchona, which is not impossible, or even improbable, we shall then be able to supply its place by this principle of the cornus Florida.

Extract of the Cornus Florida.

The cornus Florida yields a beautiful extract resembling very closely that of cinchona, differing however in its sensible characters from the extracts of the superior species of Peruvian bark, by being less bitter and more astringent. The following is the

most eligible mode for preparing this extract, evaporate in a sand or water bath, a tincture of the bark, made by digesting it in proof spirits, in the proportion of two ounces of the former to a pint of the latter, suffering it to stand for at least a week before straining, and occassionally during this time submit it for a few hours to a moderate heat, thereby facilitating the solution.

This extract from its most prominent and sensible characters, is unquestionably much more active than the common extract of Carthagena bark, and is a preparation admirably adapted in all cases where the cornus may be employed with advantage, and in consequence of being a concentrated preparation, separated from the ligneous and insoluble portions, and containing less gum and mucous matter, (which constitutes so large a proportion) is certainly much preferable to the crude substance, and no doubt will be resorted to by many country practitioners as a useful expedient, particulary in those places where this article is in profusion, and where bark of good quality is frequently very scarce, and sometimes even unknown.

Extract of Cornus Circinata.

The cornus circinata is a more astringent substance than the florida, an extract may be made from it by the same process as that of the former. The cornus circinata has been very successfully administered in cases of dysentery by Professor Ives, of New Haven; (see Dr. Robison's interesting essay on this article in the North American Medical and Surgical Journal.)

CARPENTER'S

OIL OF CANTHARIDIN.

This is a new and highly valuable article, and I have no doubt, from the many advantages which it possesses, that it will entirely supercede the common mode of blistering; a few drops rubbed two or three times on the part, will effectually draw a full and complete blister, with little or no pain, and without the necessity of applying any thing on it to assist the operation. This is certainly preferable to applying a plaster which often gets removed from one place to another, and thus frequently vesicates a greater surface than was intended or required, and sometimes from this frequent transition, only partly vesicates and causes considerable pain without having produced the effect intended, or being any benefit whatever to the patient. A piece of paper which has been made to imbibe this oil, forms an excellent blister, which may be accommodated accurately to the shape of any part, however irregular. The vesication thus produced is so exactly circumscribed, that the blister formed corresponds with the sharpest angles which may be given to the paper employed. One drop is sufficient to make a blister of the size of a quarter of a dollar. On such places where the skin is thicker or more solid than those

which are less exposed and covered with clothing, it requires that the oil be applied two or three times in the course of one or two hours, or that the part to be blistered be covered rather more with the oil; this however will be seldom necessary, as blisters are most frequently applied on parts which does not require this particularity.

It begins to draw in four, five or six hours, according to the place where it is applied.

In some cases it may be advisable to cover the part with a little soft paper or linen where it will likely get rubbed; but in most cases no protection whatever is necessary. After the blister is cut and the lymphatic water is discharged, it will be of great service to press the epidermis close to the skin and in most cases it heals in twenty to forty-eight hours.

When a rubefacient is wanted, one drop dissolved in ten or fifteen drops of sweet oil, or mixed with lard, will answer that purpose and for its convenience and ready application, will be better adapted than any preparation I am acquainted with.

One ounce of this oil contains the vesicating properties of nearly one pound of cantharides. Its use is so mild that generally speaking it produces a blister without the least disagreeable sensation, except on those places where muscles, nerves, or tendons are in a state of compression. We trust, an article possessing so many advantages will receive the sanction of the faculty.

P. S. We are pleased to find, since the above has been written, that a number of experiments made by several distinguished members of the faculty, have resulted in the most satisfactory manner, and entirely corroborates the above statements. We therefore can offer the above preparation with the highest degree of confidence.

Caution.

To guard against spurious imitations of this article, each vial will have the written signiture of the proprietor on the outside envelope of the same.

Extract of Black Pepper.

Digest one pound of coarsely ground black pepper in four pints of diluted alcohol for four days, occasionally submitting it to a temperature near ebullition, in a water bath, filter and evaporate to the consistence of an extract.

This is found also to be an active remedy in intermittents, in doses of 2 or 3 grains. In a soft state it has proved very convenient to give consistency to piperine and quinine, for the formation of pills, while at the same time it increases their activity. The extract of pepper in every formula I have seen is directed to be prepared with water. This forms a much less active preparation, and possesses several inconveniences to which the former is not subject.

I have employed both the white and the black pepper in the above preparations; and although it is

stated by most authors that the white is milder than the black, I have found it to yield more piperine, and an extract of much more acrimony and activity, and to contain much less colouring matter. The constituent principles of pepper are piperine, oil, resin, fecula, and colouring matter.

Calomel.

This is decidedly the most valuable of the mercurial preparations, and there is no article of the materia medica which a physician should be more particular in than calomel, as it is more liable to be improperly prepared without any evident signs of the fact than any other preparation. It frequently contains a portion of corrosive sublimate, which does not in the least alter its external appearance. It is therefore an object of the highest importance for the physician to test his calomel before using it, unless he gets it where he can place the most implicit confidence. Corrosive sublimate may be detected if present in calomel, by precipitation being produced by the carbonate of potash, in a solution made by boiling the suspended sample with a small portion of muriate of ammonia in distilled water. A more simple mode, and one which will generally answer the purpose, is by rubbing the calomel with the pure water of ammonia; it should become intensely black, and not to exhibit any trace of an orange hue—also lime water, which is a more delicate test than ammonia, for the corrosive sublimate. The mode of preparing calomel is various; that by sublimation appears to be preferable

and is the process now generally adopted in the preparation of calomel. It has been suggested that the precipitated calomel is more free from corrosive sublimate; this is altogether a mistaken notion, as the precipitated is quite as liable to contain the muriate, and also the sub-nitrate. When properly made, the sub-muriate obtained by precipitation, scarcely differs from that obtained by sublimation. Gottling found no other difference, than that the precipitated sub-muriate became gray when triturated with lime water, whereas the sublimed sub-muriate becomes black. But he exposed to heat, half an ounce of the precipitated sub-muriate in a subliming apparatus; scarcely a grain of a reddish matter remained fixed, and the sublimed matter now became black when triturated with lime water, and differed in no respect from the sub-muriate prepared in the ordinary way by sublimation. It would therefore seem to be an *improvement* in the process to sublime the sub-muriate, after it is precipitated, especially as by that operation it would be most effectually separated from any sub-nitrate which might be mixed with it. Colomel can be rendered completely free from corrosive sublimate by repeated washings in large quantities of water, the latter being soluble while calomel is not. The English Calomel is generally prepared with great care, and free from corrosive sublimate, and has consequently been preferred by our physicians who prefer giving a high price for it, to be more certain of obtaining a pure article. I am exceedingly pleased, however, to find that the calomel prepared by Messrs. Farr and

Kunzie, of our own city, is equal to any of the English I have ever seen, and physicians and others can safely rely upon this calomel being equal to any of the imported, which is obtained by sublimation or precipitation.

Tartar Emetic.

This article so important to the physician, is another which he should be extremely careful in purchasing, as it is liable to vary considerably in activity. It should always be purchased by him in *crystals*. The following are the characteristics of its purity: A solution of it in distilled water ought to furnish a gold coloured precipitate with acetate of lead, soluble in nitric acid, and with lime water a white and extremely thick precipitate dissolving with facility in pure nitric acid. If the crystals deliquesce, the presence of other salts may be inferred, and they ought to readily and totally *dissolve* in water, forming a *clear solution* both previous too, and after adding the wine, in making the antimonial wine.

Pyroligneous Acid Purified.

This is made of various degrees of strength, from number four to twelve. These numbers correspond with its strength compared with the common distilled vinegar of the shops, number eight is the most useful, and is more sold than any other. This acid is eight times the strength of the distilled vinegar generally sold. Thus, one pint of this acid added to seven pints of water, instantly produces a pure vegetable

colourless vinegar, of the proper strength for the use of apothecaries and druggists.

In diluting the acid with water, it is only necessary to shake them well together. This acid is a powerful anticeptic in contagious diseases, and has the valuable effect of preserving meat and all animal food for days and weeks in the hottest weather, and will by washing the part affected, completely remove must, taint, and incipient putrefaction from animal matter. It is particularly grateful and efficient as a fumigator.

Pyroligneous acid will no doubt entirely supersede the distilled vinegar in medicine and the arts. It has been so completely separated from all impurities and foreign matter, as to furnish a perfectly pure acetic acid, invariable in its acid powers, and uniform in its chemical properties. It is entirely free from any unpleasant taste, colour, or sediment, and forms a limpid colourless solution with ammonia. The common distilled vinegar of the shops varies essentially in strength as well as purity, its acid powers differing from thirty to forty per cent. in value, and it is sometimes 7°, and at other times 5° by the revenue acetometer, and hence the difficulty of getting an uniform article for medical application. The difficulty appears now entirely obviated by means of the pyroligneous acid which will be of standard strength, according to the numbers, and we think it will immediately supersede the distilled vinegar on the substantial ground of its preference.

Vegetable Extracts.

These are a highly valuable and important class of medicines, and there is none in which there is a greater disparity in the quality, some of them are extremely active, while the same is almost inert at other times, owing to the various modes of preparation, the time it has been kept, and other circumstances which influences its condition. It requires the physician to be more discriminating in this class of articles, than any other in the catalogue of medicines, he should be particularly guarded in the purchase of them, also in keeping them well protected from the air and light in a cool situation, and not accessible to dampness, he should be particular in ascertaining the manufacturer of the extracts, in order that he may know whose preparation he can rely most upon, and having discovered a person who makes good extracts, he should under no circumstance use any other. I have found of the imported extracts those made by Mander, Weaver & Mander, are superior to any I have ever seen, they are of uniform strength, and can always be safely relied upon, I have made arrangements to be constantly supplied with extracts from this house, and physicians can always receive these extracts at my Chemical Warehouse, 301 Market street.

Carbonate of Iron.

The carbonate of Iron is one of the most excellent and safest chalybeates, it may be given from five to 20 grains, but all chalybeates answer better in small

doses frequently repeated; hence it is the chalybeate waters, aided by saline medicines are so benefical.

Physicians should always prefer the precipitated carbonate, which he should also be particular in knowing it to be properly made. The rubigo ferri (sub. carb. ferri) is a very imperfect preparation, and large quantities of it is now manufactured in a very rough and careless manner; I have seen considerable of it, which I found on examination to be near one half whiting. In the Medico Chirurgical Review, vol. xviii. No. 42, for October, 1830, is an interesting paper from the Glasgow Journal, on the pharmaceutical preparations of the precipitated carbonate of iron. The British pharmacopæs direct a waters solution of sulphate of iron and sub-carbonate of soda to be mixed, and the resulting precipitate to be collected on a filter and dried. The precipitate at first is white, but soon becomes of a dark green colour, and very bulky in substance. Exposed to the air, the colour changes to a rusty yellow, the effect of oxygen. A decomposition is produced according to our author in the following manner.

The precipitated carbonate of iron consists of carbonic acid combined with the black oxide, which black oxide readily combines with more oxygen, forming the red oxide of iron, but as the red oxide cannot like the black, retain carbonic acid in combination, this acid flies off. So that in the yellow matter alluded to, an additional dose of oxygen has taken the place before held by carbonic acid. The yellow colour is owing to the red oxide existing in combina-

tion with water, or to use the language of modern chemistry, a hydrate, and the yellow colour is changed to red whenever we apply so much heat as will drive off the combined water. Then the red oxide of iron, or colcothar of vitriol alone remains. The consequence is, that what is sold in shops for precipitated corbonate of iron, contains no more than a trace of that substance, and is frequently nothing more than colcothar of vitriol. This colcothar the author observes, is not less different from carbonate of iron in its medicinal effects, than its chemical properties.

I have seen patients of different ages and sexes swallow for a fortnight, at the rate of half an ounce per day of colcothar of vitriol, without producing any apparent effect, except that their stools were coloured by the powder to a reddish hue, indicating that it had passed through the body unaltered. Whereas, I have seen a healthy man made sick by a dose of a quarter of a drachm of genuine carbonate of iron, and made to pass in consequence dark greenish black stools, for two days after, and I have seen similar effects produced on patients, who had been unaffected by colcothar of vitriol. The sikness however is not produced after the first or second day.

These observations deserve the attention of the profession in these days when carbonate of iron is so much in use.

We give the remaining part of the paper in the author's own words.

From the preceding observation it is easy to gather, that the two defects to be avoided are exposure

to air and exposure to heat. Both of these defects I propose to avoid by forming the precipitated carbonate into an electuary, thus:

Take of sulphate of iron and sub-carbonate of soda each eight ounces, powder each salt and dissolve them separately in warm water, if necessary filter. Being filtered and cool, mix the solutions in a deep vessel capable of holding one or two gallons of water, which fill up cold, stir, let it subside, and then decant the clear liquor from the precipitate, fill up again with water and likewise again decant, and repeat this operation two or three times, so as to separate the soluble salts, next put the precipitate on a filter of cotton or linen cloth, supported by a square frame. When the water has ceased to pass, gather into one hand the edges of the filter, so as to make it a sort of bag, and with the other twist round from the holding hand, downwards, so as to squeeze out the remaining water. The precipitate will now have the appearance of clay, too soft for moulding. With soft sugar and aromatic powder in suitable proportions, make it into an electuary.

Thus we obtain a carbonate of iron uniform in its properties, hardly deteriorated by the process it undergoes, and little liable to change by keeping.

The precipitated carbonate of iron while yet moist, is soluble in carbonic acid. Hence a teaspoonful of the above electuary is soon dissolved in a glass of ginger beer, except the aromatic powder it contains. It may be asked therefore, whether an eligible medicine might not be obtained by uniting this prepara-

tion with the ginger beer powders; the excess of carbonic acid in them would dissolve the iron, and you would have a highly agreeable draught with all the chalybeate properties of this valuable medicine.

G. W. Carpenter is pleased to inform the faculty he has prepared the above preparations in the most careful manner, and given them the following names, by which physicians can always designate them when they wish these preparations prepared by me.

CARPENTER'S

Aromatic Chalybeate Confection.

This article since I have had the pleasure of preparing it, has been used by a number of the most respectable physicians, and has given the highest degree of satisfaction, and who accord fully with the writer in the review.

CARPENTER'S

Chalybeate Ginger Beer Powders.

These powders form an extremely pleasant and agreeable draught, and from their tonic and chalybeate properties, aided by the stomachic effects of the fine purified ginger in their composition, render them an extremely valuable medicine, and adapted to many cases of weak and diseased state of the stomach and bowels. They have already been extensively used, and have given in all cases the highest degree of satisfaction, and produced the most salutary and beneficial effects.

From full experiments carefully made with the preparations of iron, as suggested above, the most satisfactory results have occurred, and there appears to be no doubt but that it deserves all the attention of the faculty, which the writer claims, and that it will receive their sanction and approbation from its decided superiority to the ordinary preparations of iron, will entirely supercede their use.

CARPENTER'S

COMPOUND FLUID EXTRACT OF

BUCHU.

DIOSMA CRENATA.

For Diseases of the Bladder, Obstructions of Urine, Chronic Gonnorhea, and Gleets of long standing.

The Buchu leafs (Diosma Crenata) have been highly recommended for diseases of the bladder, by some of the most distinguished physicians in Europe; and when united with cubebs and diuretics, have effected some extraordinary cures, a few cases of which will be given hereafter. In order that physicians may have a uniform preparation of this valuable medicine, made in a careful manner, with proper proportions and specific dose adapted to the disease; George W. Carpenter is pleased to announce his Compound Extract of Buchu, which he recommends to the medical profession as a concentrated preparation of this article, and the most convenient mode in which it can be exhibited, and which will obviate the necessity of preparing the decoction, which is always attended with trouble and expense, and always differs more or less in strength, according to the mode of preparation, which different individuals adopt, and not unfrequently much impaired, if not totally rendered inert, by the injudicious and unskilful management of those unacquainted with pharmaceutical preparations. This compound will therefore overcome all

these difficulties, and being of uniform strength, and ready prepared for the patient, can be administered with more certainty of success by the practitioner, and with less trouble and expense to the patient. Under these circumstances, this medicine has been prepared expressly for the use of the faculty, and will no doubt receive their approbation and encouragement.

Among various highly satisfactory accounts of the value of the Buchu in diseases of the bladder, obstructions of urine, chronic gonnorhea, gleets of long standing, &c. I will quote a few cases and remarks by Dr. Ephriam McDowell, a highly distinguished physician and member of the Royal College of Surgeons in Ireland, published in the transactions of the King and Queen College Physicians.

A variety of remedies have been advised, says Dr. McDowell, for chronic inflammation of the bladder, &c. which when neglected, extends to the ureters and kidneys, producing a train of severe local as well as constitutional symptoms. Its original cause frequently cannot be discovered in many cases; we will however find it frequently succeeding to mismanaged gonnorhea, neglected retention of urine, diseases of the prostate glands, strictured urethra, or calculous affections.

In some cases, as for example, when it depends on diseases of the prostate gland, we can do little more than palliate urgent symptoms; in other instances much may be effected.

A variety of remedies have been advised for these

diseases, most of them I have repeatedly tried with little or no effect, beyond that of being in some degree paliative. The Compound Buchu having been lately strongly recommended, I was induced to make trial of it, and my experiments have resulted in the most satisfactory manner, having succeeded in saving the most inveterate cases, in which I had no hopes of success. I will quote a few for example.

Case First.

The first case in which I used it, was apparently a hopeless one, recommended to me by a medical friend in December, 1821. James Thompson, æt——— upwards of six years ill, emaciated and greatly debilitated, lower extremities paralytic. When he passed his urine, it was generally either with great difficulty from its being loaded with a large quantity of slimy, tenaceous and stringy matter, or else involuntarily. His bowels were habitually costive, appetite totally gone. He had been under the care of so many medical practitioners, without the least benefit, that I feared little could be done for him. I passed a bougie in the first instance, to ascertain the state of urethra, which I found rather irritable. I also used several of the common remedies for irritable bladder with no effect, at the same time closely attending to the state of the digestive organs; lastly I gave the Compound Buchu, which gave immediate relief. In six days after I found his appetite and strength improved, able to walk firmly, the mucous much diminished in quantity, capable of re-

taining his urine some hours, and no longer passing it involuntarily. His own words to a medical friend were nearly the following:

"Instead of being disturbed every five minutes during the night by painful erections, or by the desire of making water, I can sleep some hours at a time; no involuntary passing of urine. I can walk stoutly through my room, and even up stairs without help; my appetite is excellent; the heart burn gone; the sediment in the urine greatly diminished. I feel a strength in my back and loins unknown to me for years." He continued to improve for a considerable time, but being unable to obtain any more of the Buchu, he in some degree relapsed; his condition however infinitely improved, and a short further continuance of the Buchu would restore him to entire health.

Case Second.

Philip Dwyer, aged sixty-seven years, sallow complexion, emaciated, ill for three years; complains of severe pain in the pubic region, particularly before he passes water. Great irritability of bladder, passing water in small quantities every quarter or half hour during the night; during the day can occasionally retain it for two or three hours. Less irritability when using much walking exercise; when sitting, is effected with a stinging or scalding sensation in the prostate region. Urine generally white or muddy. Frequently passes a large quantity of slimy, pale yellow coloured, mucous, voided with great difficulty, and soon putrefying, is much relieved by its expulsion

from the bladder. Is greatly debilitated, and has lost much weight. Tongue loaded with yellowish mucous. Thirst. No appetite. Bowels generally constipated. No enlargement of the prostate glands could be felt.

Previous History.—Never had gonnorhœa. Has been a temperate liver. The disease commenced three years ago, first with slowness and difficulty in passing water, which was followed by frequent micturition. He attended the Talbot dispensary for five months, and left town apparently cured. He relapsed however, in a month, and returned to the dispensary, May 13, 1822. He was ordered a pint of the Aqua Calcis daily, twenty drops of the muriated tincture of iron three times daily, an opium suppository (three grains) every night, and purgative pills to be taken occasionally.

May 24. Up five times last night to pass water; slime in less quantity; can expel his urine with more force.

May 29. Worse; up fifteen times last night. The slime has not been discharged for some days; since its stoppage great irritability of the bladder has existed. Prescribed the Buchu and continued the use of muriated tincture of iron.

May 31. Reports that he has been better for the last two nights than for years previous. Passed a large quantity of slime yesterday, which came away readily: up but four times last night.

June 7. Continues better.

June 9. Great irritability of the bladder. A pain-

ful swelling in pubic region; no mucous discharged for some days. This relapse arose from not being able to procure the Buchu during the last week. The Buchu repeated as before, also the muriated tincture of iron.

June 21. Much better. The slime was discharged after taking the medicine twice; up but twice last night.

The Buchu continued as before.

July 5. Continues mending.

August 4. Called on me to say he continues well, and has been able to follow his ordinary occupation as a labourer, for the last month, and considers himself radically cured.

Case Third.

Henderson Waters, a debilitated and emaciated man, aged thirty-one years, visited me, August 4, 1822, with my friend Dr. Cumming; found him labouring under much fever. Urine dribbling almost constantly from him, or else passing it in the quantity of half an ounce every five minutes; the urine loaded with slime; lower extremities totally paralysed; the upper nearly so. His lower limbs rigid, and frequently jerked up under him by painful spasms; severe pains in the soles of his feet; much irritability of the rectum. The glans penis in a state of slough, from keeping it constantly immersed in the urinal. The last dorsal vetrebræ more prominent than usual; no pain caused by its forcible pressure. The usual remedies were applied by two eminent physicians

who had been attending him without success or benefit.

June 8. Put on the use of the Buchu as the last case.

August 10. Can retain his urine for half an hour at a time; little or no pain in the bladder; strength and appetite improved. The sloughs detached from penis, sore healthy; a slight slough over the trochanter major, from pressure and debility; ordered nourishing diet, and to continue the Buchu.

August 20. (Reported by Dr. Cumming.) In every respect better; can now retain his urine for two or three hours at a time; no uneasiness in the bladder. For some days past, sitting up; looks greatly improved. Tongue, pulse, and bowels natural. Paralytic affections of lower extremities, as before.

August 30. At his work as a watchmaker. Can retain urine for four or five hours; health good; limbs much stronger.

January 8. Continues as last reported, and is entirely recovered.

In dispepsia it appears to be a valuable auxiliary to other medicines. I had an opportunity of meeting with a case of gravel, of the uric acid kind, in a sedentary and dispeptic individual; the attack coming on whenever the digestive organs were deranged, and frequently lasting with much severity for three days, attended with violent pain, shooting in the course of the ureter to the groins, testicles, and anterior part of the thigh; much fever, restlessness, and irritability; any excess in drinking wine, invariably produced an

attack. He has been in the habit, for the last three years, of taking the Aqua Kali Caustica, whenever attacked, and usually continued it for a considerable time, in quantities of one ounce daily. In a late paroxysm, he took it along with the Buchu; a white precipitate in the urine in large quantities resulted; he then omitted the alcali and took the Buchu alone. He recovered rapidly; both the white and red precipitate ceased to recur, and he has had no attack of it since.

The above accounts of Dr. McDowell are entitled to the highest degree of confidence, being a man highly distinguished in the medical profession, and of large experience from the most extensive practice.

Caution.

After the reputation of any valuable medicine is established with considerable expense, trouble and many experiments by the proprietor, he should receive some benefit from it. He is sometimes, however, disappointed by the spurious imitation of his preparations, made by the ignorant, who prepare inferior and frequently entirely different compounds, and sell under the same name, and on the reputation of the genuine medicine, copying the directions, and putting it up in the same bottles and form, and thus frequently deceiving the public, and injuring the reputation of valuable medicines. Under these circumstances I would beg the faculty to be extremely particular in their orders, and to observe that each bottle will have my written signature, without which none will be genuine.

CARPENTER'S
SARATOGA POWDERS,

FOR MAKING

Congress Spring or Saratoga Waters.

There is perhaps scarcely an individual in the United States, who is not acquainted, either by experience or report, with the salutary effects of the Congress Waters at Saratoga. From thirty to fifty thousand persons annually visit these Springs, many from the remotest sections of the United States, and some from the West Indies, and other foreign places. The great expense in visiting the Springs, excludes the greater portion of the community, (more than nine out of ten,) and the bottled water, from its high price, prevents its use to the extent of being serviceable, and confines it to a small number; it appears to be a serious evil that so valuable an article should be so restricted, that comparatively few should be able to enjoy what is so conducive to general health in the hot weather of our summer months. From these circumstances, Geo. W. Carpenter is pleased to announce the preparation of the above powders, containing all the essential substances with which these celebrated Springs are impregnated, and from which the waters of the Congress Springs at Saratoga are precisely and effectually imitated. With a view to accommodate the public, and to bring into general use so convenient and valuable a substitute for these

waters, he has been induced to go very extensively into the manufacture of them, and to put them at a price to be within the reach of most persons. For the accommodation of the public, agents have been appointed in all the cities and principal inland towns, to give a general circulation to so useful an article throughout the country. The public are recommended to make trial of these powders, as he finds by experience, and from the opinion of the most eminent of the faculty, that the water made from them possesses the same medical qualities, is as effectual in its operations, and precise in taste as that taken immediately from the Springs. These powders are therefore recommended as a valuable remedy in all cases where Saratoga Waters are prescribed.

Persons on sea voyages, or residing at a distance from the Springs, and in warm climates, will at once perceive the great advantage of making use of these powders, which besides being more portable, and less expensive than the bottle water, will keep without injury for any length of time; and as they are equal in medical effect to that taken fresh from the Springs, they are certainly much preferable from the many advantages they possess.

These powders are superior to the Seidlitz, inasmuch as they are equally aperient and agreeable, and at the same time possessing tonic and chalybeate qualities in a superior degree, and are consequently better adapted to weak and debilitated constitutions than any other cathartic in use.

It is now scarcely two years since the introduction

of these powders, in which time they have been sent to almost every populated section of the United States, and have given in all places the highest degree of satisfaction. They are now extensively used throughout the Southern States, where they are highly appreciated by the faculty, and extensively employed by the most distinguished physicians. They have elicited from the professors of several medical institutions, and from highly distinguished individuals in various places, voluntary acknowledgements of high commendation on their valuable properties. The reputation and demand which *Carpenter's* Saratoga Powders have acquired, will no doubt be an inducement for the ignorant to attempt their preparation, the proprietor has already received frequent complaints that spurious and inferior imitations have been made, and that sales are effected on the reputation and character of his preparation. I deem it justice to the community to apprise them of these facts, that they may be on their guard. They should be particular to specify in their orders "Carpenter's Saratoga Powders," otherwise they may get a different article from what they intended.

☞We are pleased to find that the imitation powders are not patronized by the faculty, but are objected to wherever they are known, in many cases, however, they are purchased by individuals who are not acquainted with the circumstances, and do not discover the fact until they begin to make use of them. The proprietor has received numerous letters on the subject of this grievance, and a number of expres-

sions of dissatisfaction have appeared in various journals and Gazetts of the Southern States, where these powders are most used. The following is from the Southern Times and State Gazette, of July 11, 1831, published at Colombia, South Carolina.

"I copy with pleasure the editorial article* from the National Gazette, of Philadelphia, because I can safely and honestly say, the compliment is deserved. There are some very inferior imitations of Carpenter's Saratoga Powders, which are by no means worthy of public notice, compared to Carpenter's. As a summer laxative, equally pleasant and efficacious as the water; these powders may be relied upon."

* See National Gazette of June 22, 1831.

CARPENTER'S

COMPOUND

SYRUP OF LIVERWORT.

Hepatica Triloba.

This plant has proved to be a safe and valuable medicine for Coughs, Spitting of Blood, Consumption, and Liver Complaints.

Most of the medicines made use of for the above diseases, are of a stimulating nature, composed generally of Rezins and Balsams, in alcoholic solutions, which, although sometimes giving temporary relief, in almost every instance where they are freely used, aggravate the disease and reduce the strength of the patient.

This article possesses superior advantages over these preparations, its action being of a tonic, invigorating and strengthening nature, thus overcoming the disease, by promoting expectoration and gradually increasing the strength of the patient, and this without being attended with any unpleasant effects; it also agrees with the stomach in all cases, and is a pleasant and agreeable medicine to take.

It has generally been administered in the form of tea or decoction; this has most frequently been improperly made by those unacquainted with pharmaceutical preparations, and has brought this medicine in disrepute, preventing its application in many cases,

where it would otherwise have proved highly useful and beneficial.

To guard against these inconveniences, and to bring before the public a concentrated preparation of this valuable article of uniform strength; George W. Carpenter is pleased to announce the preparation of Compound Syrup of Liverwort, which will obviate all the disadvantages above described. This preparation is as active as it can be made from the fresh plant, and the virtues considerably improved by the tonic and expectorant medicines which have been selected as adjuvants.

Directions.—Dose for grown persons, a table-spoonful three or four times a day when the Cough is troublesome; for children a tea-spoonful may be taken in the same manner.

N. B. During the cough, the patient will find much advantage from taking a dietical jelly, made of the flour of Slippery Elm.

REMARKS
ON
CARPENTER'S
Compound Syrup of Liverwort.

It is scarcely one year since the introduction of this preparation, in which time it has been sent to almost every populated section of the United States, and has in all places been highly approved of by the faculty, and prescribed by the most distinguished physicians, and has given in all cases the most decided and unequivocal satisfaction, and produced the most salu-

tary and beneficial effects—and in numerous instances elicited, from the most distinguished members of the medical profession, (for whose use, and under whose direction the article is expressly prepared and respectfully submitted,) voluntary acknowledgements of high commendation upon the valuable properties of this medicine.

The following are a few extracts from letters of highly respectable physicians, addressed to the subscriber on the subject of the above preparation.

From Dr. T. P. Hereford of Haymarket, Virginia.

Whose observations on the Liverwort are entitled to the highest consideration. His experience with this plant is perhaps, superior to any other medical man in our country, and the public are indebted to him for many valuable and interesting essays on the subject, in our periodical journals and papers.

From the National Intelligencer.

As Phthisis Pulmonalis or Consumption of the Lungs has been emphatically styled an *approbium medicorum*, and as it has for its victims all ages and sexes, and a large portion of the young and beautiful, it becomes the paramount duty of every humane physician, to contribute in any way he can towards arresting in its march, this terrible disease. With an eye to this purpose, I have strenuously recommended, and do still recommend, the Liverwort, particularly Carpenter's Compound Syrup, which I consider the most valuable mode it can be exhibited, being a

concentrated preparation of the fresh plant, with valuable expectorant medicines selected as adjuvants, and although I have never recommended it as a medicine, indiscriminately adapted to all cases, yet I am fully persuaded that it has done more signal service than any other single remedy, so far as experiments with it have been made, or according to the extent it has acquired the public confidence; but we are too apt to appreciate lightly, or invest with little consequence, things which have the external appearance of simplicity; while those which are enrapt in secrecy, or have a mysterious character, allure, fascinate or inspire us with confidence and admiration.

T. P. HEREFORD, M. D.

Jan. 18, 1830. *Haymarket, Virginia.*

From Dr. William Watson, a highly respectable physician of Bedford Springs, Pennsylvania; whose extensive practice and experience entitles his observations to the highest public confidence.

BEDFORD, June 27th, 1830.

DEAR SIR—You were pleased to send with my medicines, two bottles of your Compound Syrup of Liverwort. I have a favourite servant boy, who was taken with pneumonia inflammation, in November last, which resisted all the remedies and means I have been able to apply. For some time I have considered him to be in the hectic state of phytisis, having purulent cough, much expectoration, night sweats, great emaciation, &c. Under these circumstances, without any expectation of benefit, I

gave him the two bottles you sent me as directed, and immediately the fever and expectoration diminished, the sweats were removed, and his strength and cheerfulness increased. I had a quantity of the herb gathered, a syrup made in the usual way, but notwithstanding the free use of this syrup, he immediately declined, and he is now in the state in which he was when he commenced with your preparation. I believe a cure would have been effected by a few more bottles of your syrup. As I wish to give it a fair trial, you will please send me a dozen bottles by the earliest opportunity, and oblige,

Yours, &c.

WILLIAM W. WATSON, M. D.

To G. W. Carpenter.

We are pleased to hear the above case of Dr. Watson's is recovering under the further continuance of this preparation.

The following extract from Dr. Thos. F. Slaughter, a highly respectable and skilful physician of Orange Court House, Virginia, is additional evidence of the valuable properties of this medicine.

Orange Court House, Virginia, June 1, 1830.

Dear Sir—I made trial of Carpenter's Compound Syrup of Liverwort, in case of a lady, an old patient of mine, who had been afflicted for some time, as I supposed with *asthma*, and who had been reduced from extreme corpulency and robust health by her disease, to the verge of the grave; she used only one bottle of it, and has ever since been rapidly improving in health and appearance, which is attri-

butable to the use of this medicine. She is solicitous for its further use, which I cannot gratify her in till I receive more of the article. I am anxious to make a fair trial of it in this case, as well for scientific purposes, as for the great value of the life of the patient.

Yours, respectfully,
THOMAS F. SLAUGHTER.

To Geo. W. Carpenter.

The following extract from Dr. Richard M. Hill, a very respectable Physician of Gholsonville, Virginia, is an additional testimony of the value of this preparation.

Dear Sir—I am now making trial of your Compound Syrup of Liverwort, a few bottles of which I obtained in Petersburg, and so far, am highly pleased with its effects, and consider it admirably suited to the cases in which it is recommended.

Yours, truly,
RICHARD M. HILL, M. D.

To Geo. W. Carpenter.

It is much to be regretted, that every valuable preparation will be imitated by the ignorant. The subscriber has already received frequent complaints that spurious and inferior preparations have been offered, and that sales have been effected solely on the reputation of his preparation. He begs leave to apprize the faculty of these circumstances, and to inform them that each bottle of his preparation will have his written signature "Geo. W. Carpenter;" on the bottle, without which, none will be genuine.

G. W. C.

CATALOGUE OF MEDICINES,

Shop Furniture & Surgical Instruments,

For a Physician at the outset of his Practice;

PREPARED AT

CARPENTER'S

CHEMICAL WAREHOUSE,

No. 301,

MARKET STREET, PHILADELPHIA;

Where the articles can be procured of the most unexceptionable quality, put up in the neatest and most careful manner, and as low as those of like character can be had in Philadelphia or elsewhere.

It is often a difficult task for the young practitioner to call to mind the various articles which he will require at the outset of his practice, and particularly to proportion the quantities. In the annexed list are all the essential articles required for practice in the proportion which they are generally consumed. The quantities are made small, which is preferable at the commencement of practice, as they can be increased as they may be required. Those residing at a considerable distance, and require some time to

receive their medicines after they are ordered, it would be advisable to increase the quantities of some of the most important articles.

	lb.	oz.
Antimony, Tartrat. - -		4
Emetic purgative and diaphoretic, dose half grain to one scruple.		
Febrifug, (James's Powder)		4
Diaphoretic, 5 to 10 grains.		
Alcohol, 36, - - - -	2	
Stimulant, used as a menstruum or vehicle for other medicines.		
Aqua Ammonia, - - -		8
Stimulant and diaphoretic, dose 10 drops diluted with water; externally in frictions,		
Acid, Muriatic, - - -		4
Stimulant, dose externally 2 to 4 ounces in foot baths, internally, half drachm to 1 drachm in each pint.		
Acid Nitric, - - -		4
Stimulant diuretic. In lemonade by drops until an agreeable acidity is produced.		
Acid Sulphuric, - - -		8
Stimulant, dose 20 to 30 drops in 2 pounds of water.		
Acid, Pyroligneous Concentrated,		4
Astringent, refrigerant when diluted, dose of the concentrated acid 1 scuple to 1 drachm, or common acid 1 ounce.		
One pint of this concentrated acid added to seven pints of water, instantly produces a mixture similar and equal in every respect to the distilled vinegar of the shops.		
Acid, Tartaric, - - -		4
Refrigerent, dose 12 to 36 grains in solution.		
Acid, Critic, - - -		1
Refrigerant, dose, 10 to 15 grains in a pint of liquid.		

	lb.	oz.
One drachm of this salt dissolved in 2 oz. of water, instantly produces a mixture equal to a like quantity of fresh lemon juice, and for many purposes of medicine is even preferable, being always of uniform strength.		
Acid (or Flor.) Benzoin, -		ss.
Stimulant, dose 10 to 20 grains.		
Ammonia, Carbonate, - -		4
Stimulant, dose 5 grains to 1 scruple.		
Anodyne, Hoffman's, - -		8
Antispasmodic and anodyne, dose ½ to 2 drachms.		
Arsenic, alb. crude, - -		1
Tonic, (externally an eschartic,) dose 1-10 to ¼ grain.		
Fowler's solution of, -		4
Febrifuge, 5 to 15 drops.		
Æther, Sulphuric, - -		4
Diffusible stimulant and antispasmodic, dose 10 to 36 drops.		
Spt. Nitre, dulcis, - -	1	
Refrigerant, diuretic and antispasmodic, dose 20 to 40 drops.		
Aqua Rosarum, - - -	1	
Slightly Astringent,		
Arrow Root, Bermuda, - -	1	
Nutrient.		
Argent Nitrat, - - -		½
Tonic, antispasmodic and escharotic ½ to 4 grains.		
Blue Pill Mass, - - -		2
Stimulant, and antisyphilitic, dose 5 to 8 grains.		
Boras, Sodæ, - - -		4
Detergent, 1 scruple to 1 drachm, in gargles.		
Bismuth, oxyd. alb. - -		1
Tonic and antispasmodic, dose 2 to 12 grains.		

	lb.	oz.
Burgundy pitch, - - -	1	
Externally rubefacient.		
Black drop, - - -		1
Anodyne and sudorific, 5 to 15 drops.		
Balsam copaiva, - - -		8
Astringent, dose 20 to 60 drops in any emolient mixture.		
Solidified copaiva - -		2
Two four grain pills are equal to a dose of the balsam		
Oil of Copaiva, in vials - ¼ doz.		
This may be used in the same manner as the balsam, dose 5 to 10 drops.		
Balsam tolu, - - -		1
Dose, 6 to 24 grains.		
Black Oxyde of Mercury, -		1
For extemporaneously making Blue Pills, ¼ grain equal to 4 grains of the latter.		
Bac. Juniper, - - -		3
Diuretic and cordial, infusion, a teacup full every 3 or 4 hours.		
Cubebs, - - - -		4
In gonnorhea, 20 to 30 drops.		
Oil of cubebs, - - -		½
This is a valuable adjunct to copaiva, 10 or 15 drops added to a copaiva mixture will increase its virtues considerably in cases of gonnorhea.		
Sulphur. sublimed, - -		
Laxative and diaphoretic, dose 1 to 3 drachms.		
Bol armeniæ, - - -	1	
Perkins's blister cloth, - - 1 *box.*		4
A very convenient article for the country physician, being ready spread for immediate use.		
Creta, ppt. - - -		6
Antacid and absorbent, dose 10 grains to 2 scruples.		

	lb.	oz.
Carb, Ferri, - - -		4

Tonic and emmenagogue, dose from 4 to 20 grains twice a day.

Magnesia, - - -		4

Absorbant, purgative, used for acidity in the primavia, and cases of poisoning by sulphuric acid, dose from 1 scruple to 1 drachm.

Canella alba, - - -		4

Stimulant and slightly tonic, dose from 10 grains to 1 drachm.

Citrated Kali, - - -		1

This is a very valuable medicine in fevers; 1 drachm dissolved in 4 oz. of water instantly produces the saline mixture, similar and equal in every respect to that prepared with fresh lemon juice, and salt of tartar.

Pulv. Colocynth, - - -		1

Drastic purgative, dose 10 grains to 1 scruple.

Cream of Tartar, - - -	2	

Purgative, diuretic and refrigerent, dose 4 to 6 drachms.

Catechu, - - - -		2

Astringent, dose 2 scruples to 1 drachm in infusion or mixture.

Cochineal, - - -		1

Antispasmodic and anodyne, in whooping cough.

Cort Peru Rub. - - -	1	

Tonic, febrifuge and antiseptic, in adynamic intermittent fevers, scorbutus, gangrene, &c.

Cort Peru (common,) or Carthagena.		8

1-12 the value of the former.

Cort. aurant, - - -	1	

Refrigerant. In fevers and inflammations 1 scruple to 1 drachm.

Mazerion, - - -		4

Stimulating diaphoretic, dose 1 to 4 grains.

	lb.	oz.
Caryophillum, - - -		4
Tonic, stomachic, and emmanagague, dose 6 to 12 grains.		
Cassia, - - - -		4
Stimulant, cordial, dose 10 to 20 grains.		
Calomel, - - - -		8
Purgative, vermifuge and syphilitic, dose 1 to 12 grains		
Cerrosive sublimate, - -		1
Dose ¼ to ½ grain in solution.		
Cera, alb. - - -		8
External application in the composition of cerate.		
Denarcotised acidulous tincture of Opium,		8
This will be found very useful in cases where opium and common laudanum disagrees with the patient. This is sedative without the stimulating properties of opium. Dose 15 to 25 drops.		
Secale Cornut. pulv. - -		1
In parturition, dose 20 to 30 grains in powder.		
Emplast. Epispastic, - -		8
adhesive, - -		8
ditto, spread on linen, -	½yd.	
Dyacylon, simple, -		8
ditto, cum. gum. -		8
Roborans, - -		8
Extract Gentian, - - -		1
Tonic and stomachic, dose 1 to 4 grains.		
Colocynth, comp. -		1
Cathartic, 5 to 10 grains.		
Hyociami, - -		1
Narcotic, antispasmodic and resolvent in all nervous disorders, dose 1 to 2 grains.		
Cicuta, - - -		1
Narcotic, anodyne, and resolvent, dose 2 to 10 grains,		

lb. *oz.*

externally in cataplasms, lotios, &c. in scirrhous and cancerous affections.

Stramonii, - -

Narcotic, and resolvent in epilepsy, histeria, corea and cancer.

Glycyrrhiza, - - 1

Demulcent in allaying coughs, dose 2 to 6 grains.

Quinine, - - - 1

Two grains of this extract are equal to one grain of the sulphate, and is at one third the price.

Carpenter's Compound Fluid Extract of Sarsaparilla, - - - ¼ *doz.*

One tablespoon ful of this extract added to a pint of water, instantly produces the Lisbon Diet Drink of the usual strength. It is particularly recommended to the faculty as an active preparation of Sarsaparilla, and for its convenience and portability.

CAUTION.

The reputation and demand for this article has induced base imitations of it, against which the faculty should be on their guard.

Caustic, potass, - - - 1

Used externally as an escharotic.

Cantharides, - - - 4

Internally, stimulant and diuretic; and externally rubefacient and epispatic, dose 1 to 3 grains.

Conserv. rosarum, - - ¼

As a vehicle for other remedies.

Elaterium, (Clutterbuck,) - 1-8

Dose 1-8 to 1-4 grain.

Flor. Chamomile, - - 4

Aromatic and emmenagogue, dose, in infusion, from 2 scruples to 2 drachms.

Fol. Senna Alexandria, - - 8

Purgative, 2 drachms to 1 ounce, in infusion.

	lb.	oz.
Fol. Digitalis, - - -		2

Diuretic and sedative, dose 1 grain to 1 scruple.

Uva Ursi, - - -		4

Astringent and diuretic, dose 1 scruple to 1 drachm two or three times a day.

Sabina, - - -		4

A powerful stimulant, with diaphoretic emanagogue and anthelmintic properties, dose 5 to 10 grains two or three times a day.

Opium, - - - -		4

Narcotic, anodyne and sudorific, dose ½ to 3 grains.

Manna Flake, - - -		4

Laxative, dose for children 1 to 4 drachms, adults, 1 to 2 ounces.

Camphor, - - -		4

Sedative, vermifuge and sudorific, dose 2 to 20 grains suspended in emulsion.

Gum Myrrh, Pulv. - -		2

Tonic, vermifuge, emmanagogue and stimulant, scarcely used except externally, dose 15 to 30 grains.

Assafœtida, - - -		2

Antispasmodic, dose 12 to 30 grains; in enema ½ drachm.

Guaiac, - - -		4

Sudorific and antisyphilitic, in gout, rheumatism, syphilis, &c. dose ½ to 1 drachm in powder; tinct. 1 drachm to ½ ounce.

Aloes, - - -		8

Drastic purgative, dose 5 to 30 grains.

Ammoniac, - - -		4

Stimulant and expectorant, dose 6 to 20 grains in emulsion.

Kino, - - -		2

Tonic, astringent and febrifuge, tincture ½ to 1 drachm; powder 15 to 30 grains.

	lb.	oz.
Gamboge, - - -		2

Drastic purgative, in passive dropsy, chronic jaundice, vermes, &c. dose 5 to 15 grains.

Scammony, - - -		1

Drastic purgative, dose 5 to 20 grains. This is the Aleppo scammony, the Symrna is very inferior, and should not be used.

Arabic, - - -		4

Demulcent and pectoral, dose ½ to 1 ounce.

Glyster Pipes, - - -	½ *doz.*	
Hydriodat Potass, - -		1

See the remarks on this article and Iodine in a preceding part of this work.

Iodine, - - - -		1
Kermes Mineral, - - -		1

Diaphoretic expectorant and emetic, dose 1 to 2 grains.

Patent Lint, - - -		4
Magnesia, Calcined, - -		4

Antacid and purgative, dose 1 to 2 drachms.

Oleum Olivarum, - - -	1 *bot.*	

Purgative, emetic and demulcent, dose ½ to 4 oz.

Bergamot, - - -	1 oz.	

Used in giving fragrance to cologne water and other articles.

Lemon, - - -		1

Used the same.

Ricini, - - -	2 *bot.*	

Purgative, dose ʒij to ℥ij.

Cinnamon, - - -		1

Stimulant, Cordial, dose 2 to 5 drops.

Caryophilli, - - -		½

Tonic, stomachic, and emmanagogue, dose 5 to 10 drops.

lb. *oz.*

Oleum Carui, - - - ½

Stimulant and carminative, used as an adjunct to purgative pills, dose 1 to 10 drops.

Juniper, - - - 1

Carminitive, diaphoretic and diuretic, dose from 2 to 10 drops. It is sometimes given in dropsy and may be added to Foxglove when given in pills.

Lavender, - - - 1

Stimulant and cordial, dose 1 to 4 drops.

Sabina, - - - 1

Stmulant, diaphoretic and emmenagogue, dose from 2 to 6 drops.

Wormseed, - - - 1

Anthelmintic, 10 to 20 drops.

Menth. Pip. - - - 1

Stimulant and carminitive, dose 1 to 3 drops.

Sassafras, - - - 1

Stimulant, sudorific and diuretic, in chronic rheumatism and cutaneous affections, dose 2 to 10 drops.

Croton Tig. - - - 1 *vial.*

Purgative, 1 to 2 drops. See full account of it in a preceding part of this work.

Oil of Black Pepper, - - 1 *vial.*

This is much more active than the piperine, one drop of which is equal to 3 grains of the latter. It is a valuable adjunct to Quinine, 1 or 2 drops added to 6 grains will greatly increase the powers of that medicine.

Oil of Amber, rectified, - 1

Stimulant, antispasmodic and rubefacient, dose from 5 to 12 drops.

Aniseed, - - - 2

Carminative, dose from 5 to 15 drops.

Merc. Precipit. Alb. - - 1

Externally in the form of oil for cutaneous eruptions.

	lb.	oz.
Merc. Precipit. Rub. - -		4

Escharotic, externally incorporated with cerate or other ointments.

Piperine, - - - -		¼

This is highly approved of by the faculty as an adjunct to quinine in intermittent fevers. For a full and detailed account of this article, see my paper in the American Journal of Medical Sciences.

Pill Boxes, - -	2 *papers.*	
Pulv. Jalap, - - -		8

Purgative, dose in powder 15 to 30 grains.

Pulv. Rhei, - - -		8

Purgative, dose 30 to 40 grains.

Pulv. Ipecac. - - -		4

Emetic, purgative and diaphoretic, dose in powder 15 to 30 grains.

Quicksilver, (Hydrargyrum,) -		4

Vermifuge, in decoction 1 pound of mercury to 2 pounds of water.

Rass. Lig. Quassia, - -		4

Tonic, stomachic, febrifuge, dose in powder from 1 scruple to 1 drachm, infusion 1 to 2 drahms, tincture ½ drachm to 1 ounce.

Rad Gentian, - - -		8

Bitter, tonic and febrifuge, tincture ½ to 2 drachms.

Colombo, - - -	1	

Stomachic and anti-emetic. Employed in nervous affections of the stomach, dose ½ drachm to 1 ounce.

Do. Pulv. - -		8
Serpentaria, - -		4

Tonic, febrifuge and diaphoretic, dose from 1 to 2 drachms in infusion.

Senega, - - -		4

Stimulant, expectorant and diaphoretic, dose decoction, ½ to 1 ounce, powder 10 grains to half drachm.

	lb.	oz.
Spigela, - - -		3

Vermifuge, dose 2 to 4 drachms in infusion.

Sarsaparilla, - - -	1	

Sudorific, in syphilis, diseases of the skin, gout, and rheumatism; dose, decoction 1 to 2 ounces; the fluid extract is the best preparation, see a preceding part of this work.

Scilla, - - -		4

Diuretic, emetic and expectorant, in dropsies, &c. dose from 4 to 12 grains, oxymel and syrup, 2 drachms to ½ an ounce.

Glycyrrhiza, - -		3

Mild demulcent, in decoctions generally, and joined to other remedies.

Valerian, - - -		4

Antispasmodic, tincture 25 to 60 drops, dose in power 20 to 60 grains.

Sponge, fine, - - -		2
Sem. Fœniculi, - - -		4

Carmative, used with senna and other purgative medicines.

Anisi, - - -		4

Used same as the above.

Sulphate Quinine, - -		½

Tonic and febrifuge, dose 1 to 5 grains.

Compound Syrup of Hepatica, - ½ *doz.*

This is a valuable tonic and expectorant medicine, and will be highly useful in most cases of pulmonic and hepatic affections. For a full account of this article see a preceeding part of this work.

Sub. Carb. Soda, - - -		4

Stimulant, diuretic and sodorific, dose 20 to 40 grains.

Sapo. Castile, - - -		4

Aperative and dissolvent, used as an adjunct to aloes and other purgatives in pills, externally in fomentations, lotions and baths.

	lb.	oz.
Spermaceti, - - -		1

Demulcent, emolient, dose ½ to 1 drachm, in the form of emulsion, externally in the composition of several ointments.

Salts, Glauber, - - -	2	
Epsom, - - -	6	

Purgative, 1½ to 2 ounces.

Sal. Tartar, (Sub. Carb. Potass.) -	4

Deobstruent, diuretic and antacid, used in saline draughts neutralised with lemon juice.

Rochelle, - - -	8

Purgative, ½ to 2 ounces.

Soda, (sub. carb.) - -	4

Antacid diuretic, dose 10 to 20 grains.

Ammonia, (muriate,) -	4

Diaphoretic, diuretic, febrifuge and tonic, dose 10 grains to 2 scruples, externally discutient,.

Nitri, - - -	4

Refrigerant and diuretic, and when externally applied, cooling and detergent; dose 10 to 15 grains.

Martis, - - -	4

Tonic and febrifuge, dose from 1 scruple to 2 ounces in solution or pills.

Sac. Saturni, - - -	3

Styptic and antisudorific, dose externally 2 drachms to 1 ounce in a pound of water, internally 1 grain in pills or solution.

Sulph. Potass, - - -	4

Purgative, dose ½ to 2 ounces in water.

Ung. Merc. Fort. - -	4

Externally applied.

Citrini, - - -	8

Externally applied, stimulating and detergent in herpatic and other cutaneous eruptions.

lb. *oz.*

Carpenter's Saratoga Powders, - ½ *doz.*

This is a valuable medicine where the stomach is debilitated, and ordinary medicines cannot be retained. It is much preferable to the Seidlitz Powders, being equally aperient, and at the same time possessing valuable tonic and chalybeate effects.

CAUTION.

This article has been imitated, and the faculty should be particular or they may get the spurious kind.

Carpenter's Compound Extract of Buchu.

This is a new article and will be found highly valuable in diseases of the bladder. It is recommended by some of the most distinguished physicians in the English Medical Journals. For a full account of it see a preceding part of this work.

Composition Mortar and Pestle, -	No.	1
Glass Funnel, - - -	"	1
Graduated Measure, - -	"	1
Scales and Weights, - - 1 *sett.*		
Spatulas, different sizes, - -	"	2
Sheep Skin, - - -	"	1
Syringes, Penis, - - -	"	6
Do. Female, - -	"	3
Do. Enema pint, - -	"	1
Stomach Tube, Elastic, - -	"	1
Scarificator, - - -	"	1
Cupping glasses, - - -	"	6
Thumb Lancets, - - -	"	2
Catheters, Elastic, - -	"	6
Bougies, - - - -	"	6
Pocket Case of Instruments, - 1 *sett.*		
Teeth Extracters, in case, - 1 *do.*		

Breast Pipe,	No.	1
Nipple Shells,	"	4
Quart Specie Bottles,	"	12
Do. Tinctures,	"	12
Pint Species,	"	12
Do. Tinctures,	"	12
Half pint Salt mo.	"	6
Do. Tinctures,	"	6
4 oz. Tinctures,	"	6
Wrapping Paper, blue and white,	*qrs.*	3
Assorted Vials,	*gross.*	½
Vial Corks,	*do.*	1

The following articles can always be had at Carpenter's Chemical Warehouse, and are frequently wanted by the physician who has become established in successful practice.

French Skeletons on Wires—Male and Female.

These are very superior, the bones are white as snow, the teeth perfect, and put together in the most neat and substantial manner, and with the most anatomical precision.

Arterial Preparations.

Very complete arteries and veins injected, and muscles displayed.

Dissected Heads and Separated Craniums.

Heads sawed in various ways.

Ditto, with Dr. Galls Phrenological marks, illustrating his System of Phrenology, and referring by numbers to his work.

French Anatomical Preparations, preserved in alcohol.

G. W. C. always keeps on hand a large assort-

ment of London and American Surgical Instruments of all descriptions, of the most superior quality.

He will also at any time have made to order, any description of Surgical Instruments which may be wanted.

Very superior setts of Cupping instruments, in mahogany case, with exhausting syringe, &c. They are now in general use in this city, and are much preferable to the ordinary mode of cupping.

Pill Machines, to make from 12 to 24 pills, and size from 1 to 4 grains. They will be found a very convenient, and highly useful article for the physician who has a large practice.

Superior French Syringes, of every description, for the Ear and Eye, Penis, Female, Enema, Stomach Pumps, &c. &c. These are made of block tin, and are much superior to the pewter Syringes, they are made very true, being bored and turned, instead of cast, and work as true as an air pump.

Eye Glasses, to wash the eye without the necessity of bathing it with a cloth, which frequently irritates, and only has access to the exterior.

Very neat small cases for filing, plugging, and scaling the teeth.

Obstetrical Models, or machines of leather, with mannakin, complete, for illustrating the practice of obstetrics.

Obstetrical Instruments of every description, all complete and of the best quality.

Splints for the thigh, each arm and legs, all complete.

Amesbury's Apparatus for Fractures of the Leg and Thigh.

Vaccine Virus Bottles for preserving the virus.

Having made arrangements with one of the Vaccine Physicians of this city, Physicians in the country will be supplied with fresh *Virus*, by application to the subscriber on the lowest terms.

Having made preparations particularly for supplying physicians in the country, they can at all times depend upon receiving every article carefully selected of the choicest and most unexceptionable quality, and their orders will receive the most prompt and particular attention.

CATALOGUE

OF

SURGICAL INSTRUMENTS,

Used in Practice, &c.

It will no doubt be interesting to the practitioner, to have a list of the Surgical Instruments now in use, with a description of the contents of the different setts and cases, which are put up under various names.

Lythotomy.

In a neat mahogany case, containing the following instruments.

Dr. Physic's Gorget, with 6 blades of different sizes,
4 pair Forceps, different sizes,
4 Male Sounds,
4 Male Staffs,
1 Female Sound,
1 ——— Staff,
1 Scoop,
1 Hamula,
1 Scalpel,
1 pair of Forceps with a screw for breaking stone

Amputating.

In a neat mahogany case, containing the following:

1 Capital Saw,
1 Metacarpal, do.

2 Capital Knives,
1 Catline Knife,
1 pair Artery Forceps with Slider,
1 Scalpel, steel handle,
1 pair Bone Nippers,
1 Tourniquet,
12 Curved Needles,
1 Tenaculum.

Trepanning.

In a neat mahogany case, containing the following:

2 Trephines,
1 Elevator,
1 Hey's Saw,
1 Scalpel with Raspiter,
1 Brush.

Midwifery.

In a neat leather case, containingthe following:

1 pair Forceps,
1 Vectis,
1 Crotchet,
1 Perforating Scissors,
1 Blunt Hook.

Dissecting.

In a neat mahogany or morocco case containing the following:

6 Scalpels,
1 Single Hook,
1 Double Hook with a joint.
1 pair Forceps,
1 Silver Blow Pipe,
1 pair Scissors.

Pocket Instruments. No. 1.

In a neat morocco case with a lock or 4 *fold, containing the following:*

1 pair crooked Scissors,
1 —— straight do.
1 —— Dressing Forceps,
1 —— Dissecting do.
1 Director,
1 Spatula,
2 Silver Probes,
1 Tonsil Forceps,
1 Curved probe pointed Bistoury,
1 Large Scalpel,
1 Gum Lancet,
1 Abscess Lancet,
1 Tenaculum,
1 Small Scalpel,
1 Straight Spear,
1 Silver Female Catheter,
1 Physic's Forceps and Needle,
1 Thumb Lancet,
6 Curved Needles.

Pocket Instruments. No. 2.

In a neat morocco case with a lock or 3 *fold, containing the following:*

1 Pair crooked Scissors,
1 ——Dressing forceps,
1 Dissecting do.
1 Director,
1 Spatula,
2 Probes,
1 Tonsil Forceps,
1 Curved probe point Bistoury,
1 Straight Spear do.
1 Large Scalpel,

1 Tenaculum
1 Abscess Lancet,
1 Gum do.
1 Thumb do.
6 Curved Needles.

Pocket Instruments. No. 3.

In a neat morocco case with a lock, or 2 fold. containing:

1 large Scalpel,
1 pair straight Scissors,
1 Curved Spear Bistoury,
2 Probes,
1 Tenaculum,
1 Spatula,
1 Pair Dressing Forceps,
1 Director,
1 Gum Lancet,
1 Thumb Lancet,
6 Curved Needles.

Eye Instruments.

In a neat case, containing:

3 Knives,
1 Iris Knife,
2 Needles, curved and straight,
1 Curette and Hook,
1 silver Speculum,
1 pair Forceps,
1 —— Curved Scissors.

Phlebotomy.

Silver Sping Lancets, Button-trigger,
Do. do. do. Lever,
Brass do. do. do.
—— Horse do. do.

Thumb Lancets,
Lancet Phlemes.

Cupping.

In a neat mahogany case containing:

6 Glass Cups with brass caps and valves,
1 Brass Pump or Exhauster,
1 *Scarificator improved.

*Or with German Scarificator.

Plain Sets of Cupping.

In a neat mahogany case.

6 Glass or Tin Cups,
1 *Scarificator, improved,
1 Brass Spirit Lamp.

*Or with German Scarificator.

Pessaries.

Doctor Dewees's Silver gilt,
do. do. plain,
do. Flexible Metalic,
do. Ivory,
do. Wood,
Gum Elastic,
Glass Pessaries, a new article, and recommended by Professor Dewees.

Teeth Extractors.

In a neat morocco case, containing the following:

1 Foxe's Key, spring bolt,
1 Curved Forceps, double joints,
1 Straight do. do.

1 Tooth Punch,
1 Gum Lancet.

Any other Key can be substituted for Foxe's if desired, but it is decidedly the best for extracting teeth generally.

Instruments for scaling and plugging the teeth, in neat morocco cases, containing:

12 Scalers and Borers assorted.
Also cases of Six do.

These are very neat instruments and are much used, the price being very low.

Teeth Instruments.

Hinge Fulcrum Key with a spring bolt,
ivory handles,
Do. do. ebony do.
Dr. Fox's Key, springbolt, ivory handles,
Do. ebony do.
Dr. Clarke's improved Spring Key, with a pivot,
ivory handles,
Do. do. do. ebony do.
Curved turn Key with a pivot,
Plain Fox's Key, ebony handles,
Curved Common Key,
Straight, do. do.
Curved Forceps, double joints,
Straight do. do.
Hawk's Bill do. do.
Pelican —— do. do.
Forceps, common joints,
Curved Tooth Punches,
Straight do. do.
Tooth Files,
Gum Lancets,

Trusses.

Eberle's ivory patent,
Do. do. double,
Do. wood do.
Do. do. do. double.
Ivory Turnpads,
Do. do. double,
Wood do.
Do. do. double.
Leather do.
Do. do. double,
Plain Ivory Turnpads,
Do. do. double,
Opposite sided do.
Do. do. double,
Bellows Head do.
Do. do. double,
Common spring Turnpads,
Do. do. double,
Children's do.
Do. do. double,
Umbelical,
Suspensory.

Catheters.

Silver Male,
Do. Female,
Flexible Metallic Male,
Do. do. Female,
Gum Elastic Male,
———— Bougies,
Flexible Metallic do.

Miscellaneous.

Curved Trochars for bladder,

Straight do. Lancet pointed,
Do. do. Angular,
Polypus Forceps,
Double Canulas for extracting polipi,
Tubes for Tracheotomy,
Dr. J. K. Mitchell's Spine Apparatus,
Do. do. with improved chair,
Bulloeg's Sound,
Bullet Forceps,
Doctor Physic's Tonsil Instrument,
Scarificator for Tonsils,
Dewees's Obstetrical Forceps,
Heighton's do. do.
Boudelocque's do. do.
Hall's do. do.
Davis's do. do.
Seabold's do. do.
Improved Breast Glasses and Pump, in case,
Syringe and Elastic Tube for extracting poison from stomach,
Doctor Bond's Oesophagus Forceps,
Stethoscopes,
Cooper's Bistoury,
Doctor Physick's Guarded Bistoury,
Improved Womb Syringes, in cases,
Do. Ear do.
Hare-Lip Pins,
Silver Lachrymal Pins,
Probangs.

In addition to the above, the author will have made to order any description of instruments used in the practice of surgery.

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